

**Idea Generation and Planning Time in Second Language Academic Writing:
An empirical investigation at Howard College Campus,
University of KwaZulu-Natal, Durban, South Africa.**

**By
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(by full dissertation) in the Department of Linguistics,
University of KwaZulu-Natal (Howard College)**

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DECLARATION

I, Entisar Khalifa Aljoundi, declare that

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Signed

Entisar, Durban, 14. December 2015

DEDICATION

I dedicate this work to my parents, who always supporting me and encouraging me to go further in life. I always use their advice and their experiences as reference in my life.

To my husband, Omar, who always gives me sound advice on all my endeavours, and he is always standing beside me when I need him, and to my children who are a blessing from Allah in my life.

To all my sisters, brothers as well as my family in law who could not be here to share this achievement with me. I know they are proud of me.

To the academic staff and colleagues at the Linguistics Programme at the University of KwaZulu-Natal, Howard College Campus.

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ABSTRACT

Idea Generation and Planning Time in Second Language Academic Writing: An empirical investigation at Howard College Campus, University of KwaZulu-Natal, Durban, South Africa.

Ideas generation is a cognitive process which underlies the production of coherent writing. However, little is known about the nature of this process and how it is affected by different preparatory conditions. The current study examines the effects of three planning time conditions; “planning time” (10 minutes), “extended planning time” (20 minutes), and “no planning time” and two task conditions namely “topic given” and “topic and ideas given” and their effect on the quality and the quantity of idea units produced in the planning notes and essays of thirty English Second Language (ESL) learners at a South African University. The study aims to replicate an earlier study by Ong (2013) and tests four hypotheses: Hypotheses (1) and (2) state that an extended planning time has a positive effect on both the quantity and the quality of ideas generated in the planning notes (hypothesis 1) and essays (hypothesis 2). Hypotheses (3) and (4) state that additional ideas alongside a topic enhance the idea generation process in both the planning notes (hypothesis 3) and the essays (hypothesis 4).

My findings do not verify hypothesis (1) as neither in the planning notes nor essays was the quantity of ideas affected by the planning time conditions. Hypothesis (2) was partially verified as the quality of ideas in the essays – but not in the planning notes – improved as an effect of an extended planning time. These results differ from Ong (2013) whose data fully support both hypotheses (1) and (2). My data falsify hypotheses (3) and (4) as the topic given condition consistently produced both a better quality and a larger quantity of ideas in the planning notes and in the essays of my participants. This finding concurs with Ong (2013).

In conclusion, my attempt at a replication of Ong (2013) only partially yielded the same results. Interestingly, my data indicate that the idea generation process differed between the production of the planning notes and the production of the essays.

Keywords: idea generation, task environment, planning time conditions, task conditions, English as Second Language (ESL) writing.

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CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1. The background of the study

This study aims to find better ways to assist learners who have to write in a second language (L2, English). It investigates the role of a preparatory phase (idea generation) in L2 academic writing by examining effects of three planning time conditions and two task conditions on the quality and quantity of ideas produced by the ESL students. The quantity and the quality of the ideas that are produced both in the planning notes of the students and in the essay proper will be accessed. The planning notes are the intermediate product of the planning process while the essay proper is the final product of the planning and writing processes. The transferal of content from the planning notes to the essay proper is called the transcription process. (Essay proper is the final version of the essay; i.e. the outcome of the planning and drafting process).

The effects of planning time and task conditions in L2 writing have previously been examined by Ellis and Yuan (2004); Ong (2010); Ong (2013) and Ong and Zhang (2010, 2013). Ong (2013) examined the effects of three planning time conditions (planning time, extended planning time, and no planning time)¹ and two task conditions (topic given, as well as topic and ideas given)². Ong (2013) focuses on the quality and the quantity of ideas produced in the planning notes (i.e. notes that students use to plan their actual essays) and the final essays of 52 English as a Second Language (ESL) students. Her results are as follows:

- 1- There was an outburst of ideas in essays that were written under the no planning time condition.

¹ In the ~~no~~ "planning time" condition students had no planning time; in the ~~no~~ "planning time" condition and the ~~no~~ "extended planning time" condition students were given 10 and 20 minutes planning time, respectively.

² In the ~~no~~ "topic and ideas given" condition, students were given a list of pre-formulated ideas that pertain to the topic of their essay.

- 2- Although both the quality and quantity of ideas were superior in the planning notes which were produced under the extended planning time condition, such beneficial effects dissipated during the transcription process.
- 3- The extended planning time condition produced the worst quality of ideas and the least number of ideas in the essays.
- 4- The topic given condition produced a better quality of ideas in the essays than the topic and ideas given condition; however, there was no significant difference in the quantity of ideas.

My study aims to replicate Ong's (2013) format and study, in which she used 52 Chinese-speaking ESL pre-university students, enrolled in an English Language Course at one large public University in Singapore, while I use 30 South African students as participants, enrolled in a course called Academic Learning in English (ACLE) at the Howard College Campus of the University of Kwa-Zulu Natal, Durban South Africa. To my best knowledge no study of this kind has been conducted at a South African university. There were no local studies that have been done on planning or preparation time in academic writing in South Africa. I tried to research about this topic throughout the South African universities but I did not find related issues to this topic. It may be because this study is a replication of Ong's (2013) study, and her study was not in South Africa. Overall, this study sets out to test the following four hypotheses proposed by Ong (2013, p.533):

Hypothesis (1): The ~~no~~ "extended planning time" condition (2) will produce both a better quantity and a better quality of ideas in the planning notes than the ~~no~~ "planning time" condition (1) and the ~~no~~ "no planning time" condition (3). More planning time is predicted to greatly reduce cognitive demands of the planning process that taps on the central executive function of the learners' working memory. This hypothesis is based on Galbraith, Ford, Walker, and Ford's (2005) study.

Hypothesis (2): The ~~no~~ "no planning time" condition will produce both a larger quantity and a better quality of ideas in the essays than the ~~no~~ "planning time" and the ~~no~~ "extended planning time" conditions. This hypothesis is based on Galbraith's (1999, 2009) *Knowledge Constituting Model* which suggests that no planning leads to the discovery of more novel ideas when compared to planning.

Hypothesis (3): The “topic and ideas given” condition will produce both a larger quantity and a better quality of ideas in the planning notes than the “topic given” condition because the former condition places fewer cognitive demands on the learners than the latter condition (Kellogg, 1990).

Hypothesis (4): The “topic and ideas given” condition will produce both a larger quantity and better quality of ideas in the essays than the “topic given” condition because the former condition places less cognitive demands on the learners than the latter condition. This hypothesis was derived from Glynn, Britton, Muth, and Dogan (1982) and Kellogg (1988, 1990).

Ong’s (2013) findings provide support for hypotheses number (1); the extended planning time condition resulted in a significantly better quality and a larger quantity of ideas in the planning notes than both the other planning time conditions. The extra planning time allocated to the learners in the extended planning time condition had probably reduced the cognitive demands of the planning process and hence had a favorable impact on the planning notes.

Ong’s findings also largely support hypothesis (2) in which the quantity of ideas in the essays produced under the no planning condition was significantly larger than the quantity of ideas in the essays produced under both the planning time condition and the extended planning time condition. In addition, both no planning time condition and the planning time condition resulted in a significantly better quality of ideas than the extended planning time condition (Ong, 2013, p. 538).

Moreover, her findings failed to support hypothesis (3) and (4). In her data the topic given condition resulted in an only marginally significantly better quality of ideas in the essays than the topic and ideas given condition, however, Ong could not find any significant difference between the task conditions as far as the quantity of ideas is concerned.

Ong’s (2013) investigation is corroborated by previous research studies such as Glynn et al., (1982); Baddeley, (1986); Kellogg, (1988, 1990); & Galbraith et al., (2005). One of the main emphases of cognitive psychology writing research on finding measures to reduce the cognitive load of the writing task so that learners’ working memory and processing resources are not overloaded during the process of composing a text (Ong, 2013). It has been established that

learners' working memory and processing capacities are limited, and overloading them may lead to deteriorated task performance (Baddeley, 1986).

1.2. The rationale for the study

The motivation for conducting this study emanates from my personal and professional perspectives as a student and as English as a second language (hereafter, L2 or ESL) speaker who struggled to write in the English language. I could not express myself well in English, and it took me long to learn how to write in English. This is because as an L2 speaker, the process of composition of my writing was influenced by my first language (hereafter, L1) which has different syntactic structures to the L2. So, I have to use some cognitive processing which come into play when I produce a written text. In other words I face the difficult task of coordinating a number of different processes effectively while writing, such as I need to think before writing and sometimes. Obviously, everyone should think before writing and structure what he or she will write. But as I am ESL student I need to translate my L1 thinking to L2 writing and sometimes this is difficult for me. In the consequence I need to write many drafts to get a final, satisfactory product. Many processes have to take place in my mind before I start writing. More so, my encounters with many foreign and second language learners of English during my Honours program made me realize that they were facing similar problems to the problems that I experience when they were writing in English.

Against this background I decided to conduct the current study in order to see if there might be ways to assist learners who have to write in a second language. In order to prevent cognitive overload writers use different strategies to organize the different processes that are involved in writing effectively. This study sets out to investigate the role of a preparatory phase (idea generation) in L2 academic writing by examining effects of three planning time conditions and two task conditions on the quality and quantity of ideas produced by a selected group of ESL students. It is hoped that the findings of this study will contribute to the on-going debates about assisting ESL writing and how ESL learners can overcome their problems.

1.3. Research objectives

My primary research objective is to investigate the effects of planning time conditions and task conditions on the quantity and quality of ideas during academic writing produced by English Second Language (ESL) students enrolled at a South African University (UKZN). The data will be extracted from the students' planning notes and essays.

1.4. Key research questions

The main research question underlying the current investigation is:

How is the idea generation process affected by various planning time and task conditions?

The sub-questions underlying the current study are:

- a) Which of the three planning time conditions produces a better quality and a larger quantity of ideas in the planning notes or in the essays?
- b) Which of the two task conditions produces a better quality and a larger quantity of ideas in the planning note or in the essays?
- c) What effect does the interaction between planning time conditions and task conditions have on the quantity and quality of ideas produced in the planning notes and essays?

1.5. Research methodology/approach to study

This study is an experimental study. It uses methods of quantitative research with the aim to discover if there is a causal relationship between different variables (Christiansen et al., 2010). It examines the effects of three planning time conditions (planning time, extended planning time, and no planning time) and two task conditions namely (topic given and topic and ideas given conditions). I will focus on the quality and the quantity of ideas produced in the planning notes and essays of 30 English Second Language (ESL) learners enrolled at a South African University. A random sampling method was chosen to give every member of the study

population an equal chance of being included in the sample, and to prevent an experimenter bias (Christiansen et al., 2010, p. 43).

This study strictly controls for the amount of planning and writing time given to the learners in the writing task, to draw insights into whether more ideas and ideas of a better quality may be generated through the planning or translation process (Ong, 2013). Thus, the participants are divided into three groups. In the planning time condition group, the learners are given 10 minutes to plan and 20 minutes to write. In the extended planning time condition group, the learners are given 20 minutes to plan before they write for 10 minutes. In the last group, the no planning condition group, the learners are instructed not to plan but to write immediately and continuously for 30 minutes.

In addition, in each group of the three planning conditions, half of the learners are given the topic without additional ideas (topic given condition), whereas half of the learners will be given the topic, accompanied by additional ideas (topic and ideas given condition). The two task conditions will be used to find out whether more ideas, and/or ideas of a better quality, may be generated when additional prompts are provided.

In addition to the writing task and to obtain an overall linguistic proficiency score of the participants, I will check the assessment of their marked essays. This is done with the aim of categorising the participants into three groups, i.e. high, average, and low linguistic proficiency writers, based on the average score of their previous written essays. It might be important to take note of how different proficiency levels might interact with the writing task.

Data scoring will be conducted by four independent scorers (the candidate, the supervisor and two English L1 speakers) using the scoring schemes provided by Ong (2013). Inter-scorer agreement will be a pre-requisite for utilisation of any scoring results in the further utilisation of the data. The scoring instruments are attached and are explained in the methodology chapter.

1.6. Location of the study

This study will be conducted at the School of Arts which is a substructure within the College of Humanities. The School of Arts is located at the Howard College Campus of the University of KwaZulu-Natal in Durban, South Africa. It is a multi-cultural and multi-racial campus, which

predominantly consists of black students, alongside Indian, coloured, and white students from diverse provinces in South Africa. The majority of students at UKZN are English second language students (ESL). The campus offers the module Academic Learning in English (ACLE) within the School of Arts for entry level students who need to develop their academic writing. I have chosen this module for my research because it aims to help students to become familiar with the genre of the academic essay. Thus, students will read a variety of academic essays on a particular topic and will synthesise the content into their own text.

1.7. Definition of terminologies

In this section I define the three most central terms for the following discussion, which are idea generation, task environment and English as second language.

1.7.1. Idea generation

Ideas generation is a cognitive process that is used in order to produce a coherent writing (Ong, 2013, p.529). Ullah and Ayaz (2013, p. 37) define idea generation as the process of “creating, developing, and communicating ideas which are abstract, concrete, or visual.” In addition, Magid, et al. (2015, p.102) pose that “We generate new ideas with goals in mind. These goals, and the criteria for fulfilling them, derive from multiple sources, including the particular kinds of problems we want to solve (e.g., navigation, explanation)”. In this study the term “idea generation” refers to the process of either constructing novel ideas, updating existing concepts, or retrieving stored ideas from long term memory.

1.7.2. Task environment

The importance of the task environment has been confirmed in L1 writing models (e.g. Flower & Hayes 1981) as well as Hayes and Nash’s (1996) revised writing model. In addition, Galbraith (1999) discusses in the context of his knowledge constituting model how the task environment may influence the writers’ idea generation and hence may have an impact on their quality of writing (Ong, 2014, p.18).

The task environment component is defined by a writer's social (the audience, collaborators) and physical (the text so far, the composing medium) environment. It includes factors external to a writer's cognition, in other words the task environment consists of the writing assignment, the unfolding text and the final text product (Baaijen, 2012). Kellogg (1990) states that the task environment may be influenced by two factors namely the planning time and the task conditions.

1.7.3. English as a second language (ESL)

The concept English as a second language (hereafter, ESL) refers to a situation where English is not one of the primary languages of a person. In this study, ESL learners are students who need help to achieve a balance in their language skills that would allow them to perform competently in their L2 (English). To gain competence also entails that they need to enhance their ability to read critically, discuss effectively, and present ideas in correct, coherent, and effective writing. The development of competent writing skills has been considered as the most difficult skill to be acquired by ESL learners (Mourssi, 2013). According to Walaipun (2014, p. 271) "The term writing is viewed as a meaning-created process [...]. Writing is considered a skill included in core academic skills and the most complex skill to be mastered when compared to the other three communicative skills such as reading, listening, and speaking."

1.8. Chapters outline

Chapter one provides the introduction and background to the study. It also established the rationale, objectives and key research questions and sub-questions used to underpin the study.

Chapter two aims to provide a review of the related literature and to establish the relevance of the study further. This chapter also discusses the theoretical framework used in conducting the study. Relevant literature is reviewed keeping in view the research questions and the focus of the present study in terms of the issues that it aims to explore.

Chapter three sets out to describe in detail the research methodology followed in this project. This includes a description and critique of the chosen research design, the paradigmatic, as well as the ontological and epistemological considerations that underpin my research. Moreover I present the choices made for research methods and techniques, discuss sampling issues, describe access to data sources and the data collection itself. Subsequently, I present my data analysis

techniques and procedures, ethical issues relevant to the study and issues regarding the validity and reliability of the study.

Chapter four aims at a presentation and analysis of data gathered from the participants in the current study. The data is presented and analysed in the light of the main research question and the three sub-questions using quantitative data analysis techniques. Furthermore, the four hypotheses which are adapted from Ong (2013) and which were presented earlier in this introduction are discussed with reference to the results which I gained.

Chapter five, which is the last chapter, contains the conclusion of my research study and presents recommendations which are generated on the basis of my results. It contains concluding remarks about the study and this thesis as a whole. Possible limitations of the current study are discussed and suggestions for how these limitations can be overcome are proposed. Finally I suggest ways for further research, based on the insights which I gained from this study.

1.9. Conclusion

This chapter provides an overview of the contents of the current study. This chapter explores the background of the study and the motivation and the purpose of this study. Also, the definitions of some important concepts that will be used throughout the research. This chapter presents the research questions that I am addressing and the method that I used. The next chapter discusses the literature reviewed in the study.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

In the previous chapter, I discussed the rationale for conducting and the purpose of this study. I identified the key research question as well as the three sub-questions underpinning the study. The current chapter presents a literature review related to the study. The chapter begins by examining previous research on the concept of idea generation and the cognitive writing process within models of academic writing. It also discusses how the previous L1 and L2 research studies examined the role of planning time and different task condition during the writing process, and lastly, it presents some challenges of cognitive writing models. In addition, this chapter also investigates the theoretical framework employed in conducting this study namely Galbraith's (1999, 2009) knowledge constituting model, the chapter concludes with a brief summary.

2.2. Conceptualisation of idea generation and the cognitive writing process

Writing is about discovering and inventing the thoughts to be expressed in the text as much as it is a matter of expressing them in a proper and convincing way (Galbraith, 2009ab). Thus, the development of writing is described in different ways in the literature; the study by Galbraith (2009a), e.g., refers to it as a discovery through writing whilst Flower and Hayes (1980) refer to writing as a process of invention. Writing is thus a reflection of our ideas and thoughts in which writers have to identify the rhetorical context by establishing what their goals are for the text and how they want to present their ideas in the unfolding text (Baijen, 2012). Furthermore, Bereiter and Scardamalia (1987) describe writing as the transformation of knowledge. Looking at these three different descriptions of writing by the various authors shows some recurring core ideas about the essence of writing which are captured by Baijen (2012) who describes writing as the construct of discovery; this indicates that writing arises from the "idea of knowledge".

Idea generation is a cognitive process that is a prerequisite to produce coherent writing (Ong, 2013, p.529). A text is cohesive if its elements are linked together and if it makes sense. Herring, Jones and Bailey (2009, p.2) assert that idea generation is the activity most frequently associated with creative problem solving. Flower and Hayes (1981) further reveal that generating ideas requires a text composition of a number of sub-processes which are executed in three main stages: planning, translating³ and reviewing. Planning includes the generation of ideas, organizing information and setting goals; it is a conceptual level that constructs pre-verbal messages⁴ that corresponds to the ideas a writer wants to communicate.

During cognitive writing processes, ideas are retrieved from long-term memory and re-organized if necessary. Olive, Favart, Beauvais, and Beauvais (2009) concur with the view that these planning processes also allow the various writing stages to be scheduled, by preparing composition action-plans. Ong (2013, p. 530) claims that ESL learners experience the idea generation process as a catalyst in their language learning. She further stipulates that the generation of ideas can be considered as the first phase of second language writing production while thinking about the language used to represent these ideas constitutes the second phase. Further cognitive processes which are part of the writing process are processes aimed at revising the quality of writing according to Flower and Hayes (1981); Bereiter and Scardamalia (1987), with Kellogg (1996). However the revision process lies outside the scope of the current study as it sets out to see how idea generation processes are affected by different planning times and task conditions.

Baaijen (2012, p.43) asserts that “The performance of maximum higher level cognitive tasks is likely to be strongly influenced by people’s conceptions of what the task involves. This is particularly true of a complex task like writing”. In this respect Baaijen (2012, p.43) adds that “writing involves knowing how to represent spoken language in a visual form, the writer has to know what symbols can be used to represent the sounds making up spoken language” and “how

³ The use of the well-established term “~~t~~ranslating” in this context is not unproblematic. It refers to the “~~t~~ranslating” between cognitive representations and linguistic representations; i.e. between ideas and text. In the context of writing processes in L2 learners this terminology makes it almost impossible to differentiate between this process and the translation process between lexical material in the L1 and lexical material in the L2. I hope that the difference between these two translating/translation processes will be sufficiently clear from the context.

⁴ In the current thesis writers are required to make their planning processes explicit in that they produce planning notes.

to use punctuation to mark the boundaries between different conceptual and linguistic units.” Someone who knows these conventions would know how to write and be able to produce text.

Over and above the aspects that I already mentioned, writers need to think about a specific topic and how much they know about this topic while writing. Moreover, they need to think about their goals for writing a specific text, about text and genre demands. In other words, thinking about all of these processes at the same time occupies much of the available working memory capacity and, thus writers face the difficult task of coordinating the different processes effectively while writing. Writers seem to use a variety of strategies to organize the different processes effectively, in order to prevent cognitive overload (Hayes & Flower, 1981, and Baaijen, 2012).

Walaipun (2014, p.271) asserts that “[...] in an ESL writing class, language teachers need to not only teach the English language but also simplify the complex writing process for their students.” In line with this sentiment the study by Mourssi identified that developing writing skills is the most difficult skills to be acquired by ESL learners (Mourssi, 2013). Mastan and Maarof (2014, p.2361) concur with this assertion and state “For ESL learners, the complexity of the writing process is greater because apart from dealing with the mechanics of writing, they have to also deal with the language”. This indicates that learning how to write on the one hand and the development of writing skills in the English language on the other hand are not easy for learners with different L1s and developing these skills take time as it involves the development of a huge number of cognitive processes.

2.3. Models in academic writing

According to Deane, Odendahl, Quinlan, Fowles, Welsh and Bivens-Tatum (2008) “All writing models hold that writing processes compete for limited cognitive resources”. This section highlights the different models of writing that helps the L1 and L2 students in developing their academic writing skills. Cognitive models of writing are the processes involved in writing, and how these processes develop and vary with expertise; though these models claim that writing is associated with the development of understanding (Baaijen, 2012, p.19).

2.3.1. The cognitive model of writing

The cognitive model of writing was proposed by Flower and Hayes in 1981. It was their view of writing as a problem solving activity that led to the development of a general model of the processes involved in writing and also to a theory of writing expertise (Flower and Hayes, 1981; Baaijen, 2012).

The model differentiates between three main processes: planning, translating and revising. Flower and Hayes (1981) and Baaijen (2012, p. 21) assert that –Planning has generating ideas, organization and goal setting as its components. Translating means translating plans into text. It refers to constructing sentences and to actual language production. Revising includes reading and editing as its components. It involves evaluating the text or plans for the text, so it refers to both mental as well as written evaluations, see fig 2.1”. These processes operate on a representation of the task environment as well as on knowledge stored in long term memory (Baaijen, 2012). A key feature of this model is that writing is not viewed as a linear process of plan—write—edit, but rather as a recursive process where planning, translating and reviewing can take place at any moment during the writing task (Galbraith & Trent, 2009; Baaijen, 2012).

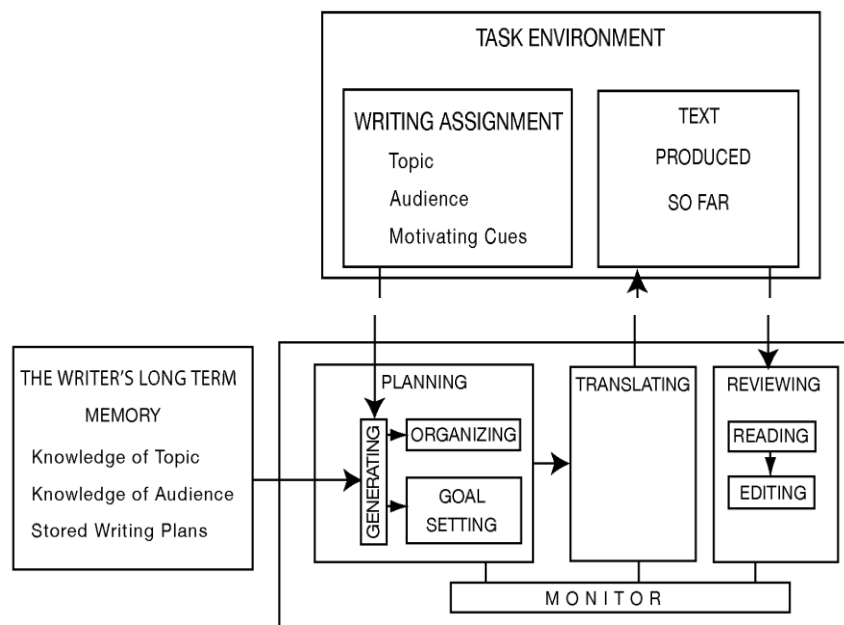


Figure 2.1: Flower and Hayes' (1980, 1981) cognitive model of writing adapted from Baaijen, (2012, p. 21).

Within Flower and Hayes' (1980, 1981) model writing is considered as an activity that is made up of the interactions between a series of cognitive processes and mental representations that writers implement to generate, express, and process their ideas while producing a text model (Flower & Hayes, 1981; Bereiter & Scardamalia, 1987). Roca de Larios, Mancho'n, Murphy, Marin (2008) explain that representations are informational structures or mental states, ranging from the more ideational to the more mechanical. Hence, while an individual is writing a text cognitive processes operate on these representations so as to transform an input representation (mental models; ideas) into an output representation (text, phrases, sentences) according to the goals which writers set for themselves. Hence, cognitive models of writing focus on the translation of thoughts into a text.

Hayes and Nash (1996) analyse the relationship between writing processes and the quality of the writing outcome. The authors suggest that teachers may want to help learners to find a suitable balance between the varying demands of the diverse writing processes. For example teachers may attempt to extend the planning time for their learners which may in turn lead to more successful writing (Hayes & Nash, 1996). Thus, "The cognitive writing processes emphasize on the thinking behind the text, and the impact of cognitive overload on this, through the interaction between thinking and text production processes" (Galbraith & Trent, 2009, p.7).

Hayes and Nash (1996) developed a model which classifies different types of planning. The first phase of writing entails various types of planning; namely the *planning process* which is focused on the management of content planning itself. The *abstract planning* is concerned with goal setting and content generation, whereas *language planning* concerns the formulation of content in a particular language. In a similar vein, Cumming's (1989 cited in Roca de Larios, et al., 2008, p. 32) study identifies two different strategies used by expert L2 writers to control their writing: framing their compositions in advance (advance planners) or enhancing their mental representations as the text progresses (emergent planners). Writers who use the former approach tend to have a background in technical writing, while the emergent planners' background tends to be in literary writing. This indicates that writing behaviour and planning behaviour might be constrained by external (social) factors. Such factors might have affected the writer's previous writing experience and training.

The second major process involved in writing is the translating process.⁵ It occurs after planning and concerns translating cognitive representations into language; it requires writers to put their ideas into words and sentences. In other words, it works at the interface between the cognitive system and the linguistic level of representation, where the pre-verbal message produced from the planning processes is transformed into a verbal message (Olive, Kellogg, & Piolat, 2008; Galbraith & Trent, 2009). The conceptual structure produced during planning needs to be grammatically encoded by retrieving the syntactic, morphological and spelling properties of words from the mental lexicon (Olive et al., 2008). Hence, coming to the actual writing process, some L2 writers might find it very confusing to write down the linguistic message because they are required to encode their ideas into language and then translate from their first language to their second language. At the transition between the translation process and the reviewing process, writers are required to engage with the motoric system and to control motor skills for hand-written or typed text of the writing process.

The third stage of the writing process, is reviewing. The process of reviewing allows writers to compare the newly written text with their mental representation of the intended text and to evaluate their written product; this may enable them to launch procedures that are intended at improving the text at both conceptual and linguistic levels (Olive et al., 2008). It also covers the evaluation of the text and the potential subsequent reorganizing, deleting and adding. All these processes need working memory resources namely the central executive (Kellogg, 2008). Thus in order for writers to produce good quality writing they depend partially on memory resources during writing which means that a memory overload may negatively impact on the writing process.

Researchers like Kellogg (2008); Galbraith and Trent (2009) as well as Ong (2014) who are interested in L1 and L2 writing point out that planning dominates the first stage of the text composing process and decreases over time as the actual text base grows; in contrast translating dominates the second stage of the text composing process, and it remains relatively constant

⁵ Galbraith and Trent (2009, p.14) use the term ~~text~~ production for this phase. They state that “The translating process is renamed as text production, reflecting a less passive view of its role in content generation [...]”.

throughout stage two. Lastly reviewing increases after the translating stage and it dominates the last stage of the text production process.

The studies by Roca de Larios et al., (2001, 2006) on the temporal distribution of L1 and L2 formulation (translating) processes by ESL writers of different levels of L2 proficiency found that, even though writers devoted similar amounts of time to formulation when writing in their L1 or L2, participants with a higher proficiency in the L2 tended to concentrate on formulation during the central phases of composing (stage 2) and to exhibit an increased interaction between formulation and the other sub-processes and stages during writing (Roca de Larios et al., 2008).

In contrast to this assertion, Victori's (1999) study identified two distinct revision patterns between the two skilled writers she analysed where the first writer favoured to carry out revisions directly after ideas had been set on paper (this behaviour is in line with Roca de Larios et al.'s 2008 suggestion. The second, equally skilled writer, however, postponed all revisions until the writing of the final draft, which is contrary to what Roca de Larios et al (2008) expected. The second writer thus behaved more like the underachievers in Porte's (1996, 1997 cited in Roca de Larios et al., 2008) study who typically carried out text-level revisions during the final stages of the composition. This indicates that over and above writing skills and proficiency levels one might have to consider personal preferences as well when engaging in writing research.

Roca de Larios et al., (2008) further assert that translation (formulation) may be more often activated than planning, which is, in turn, more frequently activated than revision. In addition, planning tends to decrease while revision increases as the composing process proceeds. To buttress this point, in Kellogg (1987) tapped into the writers' introspection to examine the quantity of time L1 writers spent on planning, translating, and revising during the composing process. The study found that L1 writers spent fifty per cent of their composing time on the translating process, and that they spent less time on planning and more time on revising as a task progressed in time.

Meanwhile, Roca de Larios et al., (2008) state that Olive et al. (2001) with Piolat and Olive (2000) identified different factors that affect writing processes in a variety of ways. According to them the writers' knowledge of the topic of the text results in a lower cognitive effort; secondly the activation of planning and revision seems to be particularly influenced by the way writers organize their composition as a response to the writing situation and lastly the writer's linguistic skills exert some influence on the activation of processes and on the attentional resources demanded by these sub-processes (Roca de Larios et al., (2008).

The cognitive sub-processes operating on a text base during the planning, translating and reviewing stages of text production are controlled and regulated by a monitor according to Flower and Hayes (1981). This monitor is known as the central executive (Kellogg, 1996). Olive (2004) states that the actual writing of a text requires the central executive to regulate and balance those sub-processes which specifically engage the verbal or visuospatial components of the working memory. Baddeley (1996) asserts that the central executive is the limited attentional allocation resource component of working memory. Therefore the central executive or the monitor plays an essential role in controlling the writing process as the executive attention is available to provide a high degree of cognitive control over the maintenance of multiple representations during text planning.

The central executive is also required when producing conceptual content, generating text, or reviewing content and text. Moreover, given that writers' attentional resources are limited, they will have to decide which cognitive processes to focus on during the text production process, and then divide their limited attentional resources among these cognitive processes.

2.3.2. Bereiter and Scardamalia's (1987) writing process model

Bereiter and Scardamalia (1987) compare a knowledge-telling mode of writing, as used by children and novice writers, and a knowledge-transforming mode of writing normally employed by more expert writers in which writers involve in the sort of problem definition and goal setting (Baaijen, 2012). According to their model, the development of ideas during writing depends upon the extent to which content retrieval is strategically controlled in order to satisfy rhetorical constraints.

Bereiter and Scardamalia's (1987) knowledge telling model of writing entails a think-say method of text composition, in which ideas are retrieved from memory in response to the topic, and are then directly translated into textual form (Galbraith & Trent, 2009). This implies that the sequence of ideas in the text is a direct reflection of the links between ideas stored in memory. In other words, the output text reflects the structure of the writer's knowledge, which is only modified as much as is required in order to conform to text demands. In line with this idea novice writers do not espouse higher level goals, as they only pay a lot of attention to surface features of the text (Baaijen, 2012, p. 26).

In contrast, Bereiter and Scardamalia's (1987) knowledge transforming model of writing comprises retrieving ideas by active problem solving processes or 'reflection'. Such active problem solving processes entail a mental representation of tasks and spaces in which problem translation processes occur which is akin to Galbraith and Trent's (2009, p.10) assertion that reflection involves a two way interaction between a content space where content is worked out, and a rhetorical space where goals for a text are developed. Knowledge-transforming strategies are concerned with actively designing a text to satisfy communicative goals with respect to the reader. Planning becomes more elaborate, and revising is more extensive than in a Knowledge Telling Model because they are directed towards the writer's underlying goals (Baaijen, 2012).

Both the models of Flower and Hayes (1980, 1981) and Bereiter and Scardamalia (1987), claim that the creation of new ideas depends on the extent to which writers adapt their thought to rhetorical goals. Therefore, these theories attribute learning to a problem-solving activity where students set explicit rhetorical goals and pursue goal-directed strategies to transform knowledge (Flower & Hayes, 1981; Bereiter & Scardamalia, 1987; Baaijen, 2012, p. 12).

The idea that writers can change their knowledge through writing is developed from the knowledge-transforming model of Bereiter and Scardamalia (1987). They describe expert writing as a knowledge-transforming process, in contrast with the knowledge-telling process employed by novices. Although this model suggests that expert writers develop their understanding when they are involved in knowledge-transforming processes, it can be noted that

knowledge change is not often empirically tested. It certainly constitutes an area where more research is required.

2.3.3. The limited attentional capacity model of writing

The basic assumption of limited attentional capacity model proposed by Skehan's (1998) is based on a theory of working memory which assumes that humans have a limited information processing capacity and that more demanding tasks need more attentional resources from learners than from experts; because executive attention is limited in capacity, such control depends on reducing the working memory demands of other sub-processes involved in writing (Kellogg, 2008, p.1).

—A significant advantage of this account is the planning, translation and revision processes which can occur at any instant during writing” (Baaijen, 2012, p.109). The way in which these processes are combined is controlled by a monitor and different configurations of these processes are assumed to reflect different writing strategies. Hayes and Flower (1986) developed this descriptive model of processes involved in writing which contrasts the writing processes of beginner and proficient writers. The model was developed by collecting thinking aloud data while writing. Expert writers were found to set more explicit rhetorical goals for their text and created more connections between their individual goals than did the novices (Hayes & Flower, 1986). Therefore, Baaijen (2012) and Hayes and Flower (1986) argue that expert writers build a more elaborate representation of their communicative goals and that they employ these goals to guide the retrieval of information during the writing process. The authors conclude that experienced writers will produce better quality writing than novice writers and that higher order reflective processes are evidenced by high quality texts.

2.3.4. The working memory model

According to McLeod (2012) the working memory model was developed by Baddeley and Hitch in 1974 as an alternative for an early version of the short term memory model. Baddeley (2012) stipulates that the working memory model evolved from the earlier concept of short term memory and the two can be used interchangeably. However, information may be stored in

different systems within the working memory and these systems are responsible for storing both new and old information. Working memory is vital for learning, understanding, and thinking as it assists in interfacing long term memory and the ‘world’; hence updating memory stores with the latest information. D’Esposito (2007, p.762) concurs with this claim and states that “working memory refers to the temporary retention of information that was just experienced or just retrieved from long-term memory but no longer exists in the external environment.” In addition “these internal representations are short-lived, but can be stored for longer periods of time through active maintenance or rehearsal strategies, and can be subjected to various operations that manipulate the information in such a way that makes it useful for goal-directed behaviour” (D’Esposito, 2007, p.762). Baddeley (2012, 1996) further elaborates that working memory thus consists of a combination between the storage and the manipulation of information and that it has three main components. These are the central executive, the phonological loop and the visuo-spatial sketch pad. Their main features are as follows:

- The central executive is the most versatile and important component of the working memory system which is responsible for retrieving long-term memory, for controlling attention, and for the supervision of the system as a whole. Studies have shown that it is responsible for monitoring and coordinating the operation of information stored in the phonological loop and the visuo-spatial sketch pad as well as for relating this information to long term memory (Baddeley, 1986, 2012; McLeod, 2012). McLeod (2012) further points out that working memory is responsible for driving the whole system and also deals with the cognitive tasks of problem solving and arithmetic.
- The phonological loop stores and maintains verbal material in active memory. Baddeley (2012, p.7) notes that “the phonological loop is a relatively modular system which comprises of a brief store together with the means of maintaining information by vocal or sub-vocal rehearsals”. The phonological loop helps in the storage of words and numbers when reading. Spoken and written materials and is also used for remembering numbers and letters. The phonological loop consists of two parts namely the phonological store that is linked to spoken words and the articulatory control (inner voice) which is used in rehearsing and storing verbal information from the phonological store (McLeod, 2012).

- The visuo-spatial sketchpad (VSSP) is the third component of the working memory model which stores and maintains visual and spatial material in active memory. McLeod (2012) asserts that it stores and processes information in a visual or spatial form. Baddeley (2012) indicates that visuo-spatial sketchpad plays a vital role in enabling people to navigate and to identify objects in their environment.

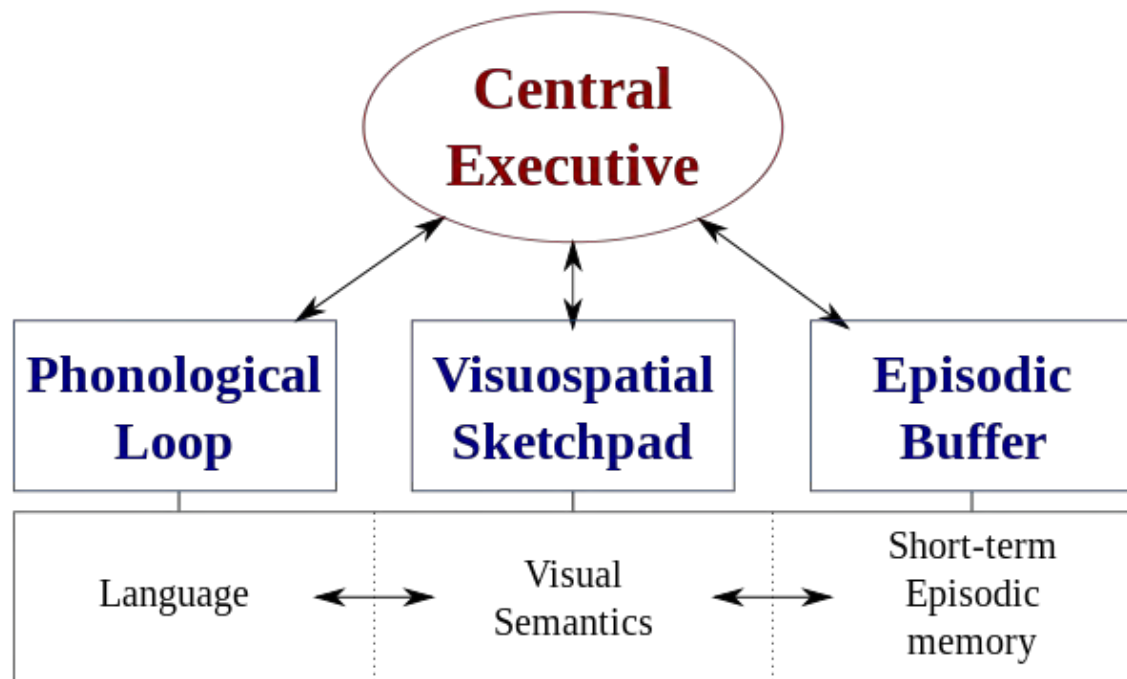


Figure 2.2: Baddeley and Hitch's (1974) working memory model (source: <https://commons.wikimedia.org/wiki/File:Working-memory-en.svg#/media/File:Working-memory-en.svg>)

Kellogg (1996) explains that the planning component in the working memory model requires both the VSSP and the central executive and that it is concerned with prelinguistic ideas, not the verbal component of working memory. However, according to Galbraith and Trent (2009), the translation stage of the writing process requires the central executive to plan sentences, and the phonological loop to store and maintain verbal material while sentences are being constructed.

2.3.5. The text production model

Chenoweth and Hayes's (2003) developed a detailed model of the processes involved in text production on the basis of a comparison between writers' L1 and L2 texts. Chenoweth and Hayes' model has four components. The first component is the proposer. The proposer is

responsible for creating conceptual content (an idea package). The idea package is sent to the second component, the translator. Then the translator produces a language string which is evaluated by the last component, i.e. the evaluator/reviser (see figure 2.3). If the language string is acceptable it is passed to the transcriber to be turned into text. However if the language string is not acceptable, the reviser can call on other processes in order to send it back to the translator which in turn may produce a revised version of the language string. Alternatively, the language string may be referred back to the proposer who may produce a new idea package altogether (Chenoweth & Hayes, 2003 & Baaijen, 2012).

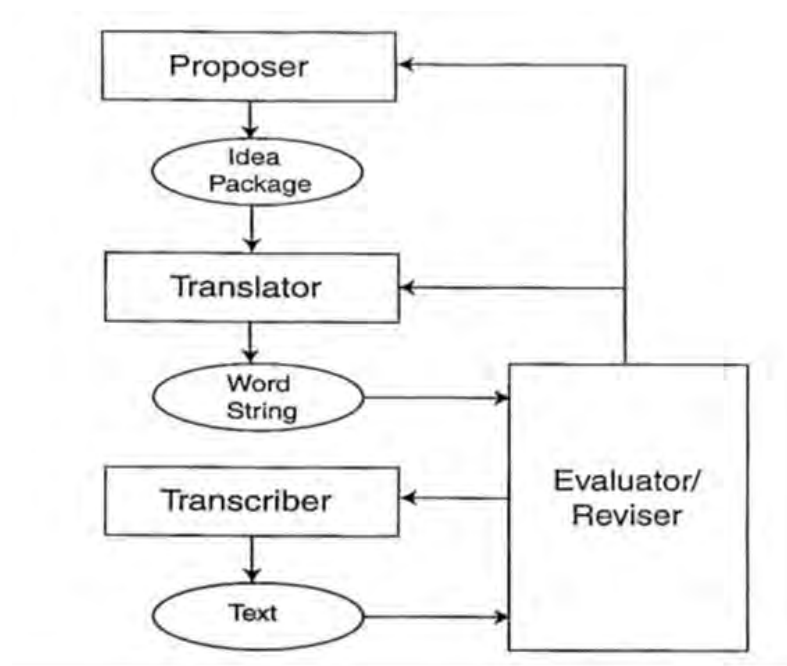


Figure 2.3: Model of the text production process by Chenoweth and Hayes (2003), (from Baaijen, 2012, p.24).

However, ideas are generated at the starting point of the text production process and must be maintained in the working memory until the complete sentence has been transcribed (Baaijen, 2012, p. 25). In other word, both the length of time it will take for the writer to complete the sentence as well as the size of the parts that sentences are produced in, could have an impact on the writer's ability to maintain the idea package they want to express in working memory. Galbraith and Trent (2009) postulate that this might impact on the complexity of ideas which the writer is able to express and perhaps also have an impact on the local coherence of the text.

2.4. Challenges of cognitive writing models

“Learning how to write a coherent, effective text is a difficult and protracted achievement of cognitive development that contrasts sharply with the acquisition of speech” (Kellogg, 2008, p.2). In line with this statement various studies on cognitive writing for example Kellogg, (1994, 1987) and Galbraith and Trent (2009) have indicated that L2/ESL learners experience major issues when they are learning to write in a second language which is not just a matter of developing more fluent linguistic skills or of having thoughts and trying to ‘translate’ them during verbalization into words in a foreign language.

In addition, Kellogg (1994, 1987) claims on the basis of a series of experiments which aimed at assessing both the written product and the writing processes that the effectiveness of various drafting strategies suffers when a writer is cognitively ‘overloaded’; i.e. when she/he is engaged in too many cognitive processes and tasks at the same time. In essence Kellogg (2008) stipulates that writing poses a vital challenge to our cognitive systems in terms of both memory load and reasoning. Galbraith and Trent (2009, p.12) concur with this claim and assert that “[...] as writing involves a complex interaction between a wide range of different processes, it places extremely high demands on the limited capacity of working memory”.

Myles (2002) lists as cognitive factors experienced by L2 learners during the complex process of writing in a second language, that the learners may not know how to organize text in the second language and may be confused about how to select relevant information, which may be one of the effects of language transfer from L1 to L2. Deane, et al., (2008, p.3) add as a further complication that “[...] writing problems arise from the writer’s attempt to map language onto his or her own thoughts and feelings as well as the expectations of the reader”. Furthermore (academic) writing entails critical thinking which needs to happen during the writing process and which has specific effects on the writers’ thoughts as they try to write.

Hence a learner who wishes to write easily and to develop good language skills will need to reduce her/his cognitive overload which in turn will help her/him with the retrieval of content

from long term memory. Consequently, ESL writers who wish to be able to translate ideas into well-formed text may need to engage in higher level planning.

This in order for the L2 learners to avoid cognitive overload, they have to develop effective strategies for managing the writing process, which will also enable effective planning (Galbraith & Trent, 2009). In this context Mourssi (2013) indicates that a ‘process writing approach’ which emphasizes the composing process may help students to improve their writing skills. Such an approach is characterized by sequentially focusing on different stages of the composing process which are: planning, drafting, revising, editing and publishing.

Galbraith and Trent (2009, p.12) do not consider this approach which entail a continuous alternation between text production and text editing. Rather they investigate the differences between a ‘rough drafting strategy’ which involves leaving the monitoring of the linguistic expression to the revision of the draft after writing down the content with an ‘outline strategy’. They affirm the effectiveness of an ‘outline strategy’, in which writers generate and organize their ideas *prior* to writing (Galbraith and Trent 2009, p.12).

Galbraith and Trent (2009) tested the aforementioned two strategies that may lead to a redistribution of processing during writing by subjecting two groups of L2 learners to either the rough draft (strategy) condition or the outlining (strategy) condition. Galbraith and Trent (2009) assert that in the outlining condition, writers planned less during text production, because planning had largely been completed before the actual writing. In contrast in the rough draft condition, revision was drastically reduced during the writing of the primary draft and delayed until later. The results of the study indicated that outlining was related with higher quality of final drafts while rough drafting showed no effect, in spite of the fact that revision had been postponed until after the initial draft and hence did not interfere with the generation of content (Galbraith & Trent, 2009). Another study by Kellogg (1994) revealed that the effectiveness of the outline strategy is a consequence of the fact that it enables writers to organize their ideas better prior to writing and it also enables them in formulating their ideas more effectively in text.

In other words, it may help ESL students to generate ideas before they engage in the actual writing process and thus reduce their cognitive overload; especially in ESL learners who are not yet fluent in the L2 and who need to literally translate their writing from their L1 to the L2. The study by Clachar (1999, p. 48) supports this hypothesis as it claims that “[...] the process of retrieving L1 lexical items from memory and then translating them into English does overload short-term memory since students must hold a mental representation containing a substantial amount of the verbatim record of L1 in short-term memory while translating into English.”

As previously indicated Kellogg's (1990) study, also supports the overload hypothesis in that it states that initial planning improves text quality because planning may reduce cognitive demands placed on writers by freeing spaces in their limited working memory during the composing process. This implies that writers who plan before writing may focus on translating processes during writing.

However the complexity of ESL writing is further highlighted by Kormos (2012, p. 390) who identified that “Individual differences might play a role in every stage of the writing process in which cognitive factors and motivational variables might have an influence on planning processes in terms of the complexity of ideas produced and the way they are organized”. This implies the significance of individual variation among ESL students, who according to Kormos (2012) require additional attention to notice gaps in their writing, in order to engage in successful problem-solving behaviours, and to get over obstacles during writing.

Additional complexities are added by Myles (2002), who identifies a number of negative social and cognitive factors experienced by L2 learners in their ESL writing. Myles (2002) claims that L2 students may experience social factors like negative attitudes towards their target language which may correlate with a wide social and psychological distance between the L2 learners and their target culture. In combination these may lead to a lack of integrative and instrumental motivation of learning which in turn may result in a continued lack of progress in the L2.

2.5. Previous L1 research studies examining planning time and task conditions

The studies conducted by Baaijen (2012) and Galbraith (2009b) on L1 students' cognitive writing abilities indicate that the cognitive sub-processes such as planning, translating and reviewing operate on two kinds of information namely the representation of the task environment on the one hand and long-term memory information on the other hand. The representation of the task environment consists of a representation of the writing assignment and a representation of the text produced. The information which needs to be retrieved from long-term memory consists of topic knowledge, a model of the audience (a hearer/reader model) as well as grammatical rules and knowledge of text standards. The importance of the task environment has been confirmed for the L1 writing tasks by Flower and Hayes (1981) as well as Hayes and Nash (1996). In addition, Galbraith (1999) discusses how the task environment may influence the writers' idea generation and how it may hence have an impact on the quality of their writing in the context of his knowledge constituting model (Ong, 2014, p.18).

The various studies mentioned above acknowledge that the task environment component comprises factors external to a writer's cognition and may include a writer's social and physical environment. Kellogg (1990) states that the task environment may furthermore be influenced by two factors namely the planning time and the task conditions, respectively.

Kellogg (1990) argues that writers who engage in planning before starting the actual writing process may be able to focus on the translating processes during writing; and these processes are critical for L2 writers. Kellogg (1988) examined the effects of outlining, no outlining, and mental outlining on the fluency and text quality of 20 college L1 learners' persuasive writing. Learners working under the outlining condition were instructed to plan an outline for 5-10 minutes before writing, whereas the students in the no outlining condition were asked to write immediately. Learners who produced text under the mental outlining condition improved the quality of the documents as much as a written outline. He found that outlining (planning) did not improve fluency but it did have an effect on the quality of the text (Kellogg, 1988). Baaijen (2012, p.111) concurs with Kellogg that "[...] the beneficial effect of outlining prior to writing is that writers are able to generate ideas separately from involvement in demanding translating processes". Kellogg (1988) further reports that outlining is associated with the production of better quality

text, since it enables writers to separate the reflective processes that are involved in generating, organizing, and evaluating ideas from the processes involved in formulating these ideas in a well-formed text.

Moreover, Kellogg (1990 cited in Ong and Zhang, 2010,p.220) examines the influence of three planning conditions (clustering, outlining, and control) and three sub-planning conditions (topic given condition, topic plus ideas given condition, and topic plus ideas plus organization given condition) on the argumentative writing of 207 university L1 learners. The clustering group was instructed to plan by linking related ideas using a visual network, while the outlining group was instructed to plan their ideas before writing. The control group was instructed to write immediately without any prior planning. He found that while fluency as measured by the total time on the task was the best in the control condition, fluency as measured by the duration of the actual writing time, was best in the outlining condition. Baaijen, (2012, p.49) poses that “[t]he dual process model claims that outlining has a differential effect on the explicit organizing process and the implicit knowledge constituting process. Outlining is assumed to enhance the explicit organizing process and thus, all other things being equal, lead to improvements in text quality”. In contrast, Galbraith’s (1999, 2009) studies show that ideas may very well be generated when learners write without planning, and that for the generation of ideas translation may be a more significant process than planning (Ong, 2014).

Furthermore, Roca de Larios et al. (2008, p.44) indicate that the model proposed by van den Bergh and Rijlaarsdam (1999) for L1 writing needs considering. According to Van den Bergh and Rijlaarsdam (1999) the choice of writing processes the writer is engaged in during a given writing task in is not random but depends on two kinds of factors, one internal kind and the other external kind. The internal factors consist of the writer’s procedural knowledge; her/his repertoire of strategies; the writers’ ability to activate and organise the different writing processes in order to manage the written task. The external factors may be summarised under the heading “task environment” which is influenced by the space between the text produced and the objectives that writers set for themselves (Van den Bergh & Rijlaarsdam, 1999). The researchers suggest that choosing the different writing sub-processes is a function of matching internal and external factors.

2.6. Previous L2 research studies examining planning time and task conditions

Flowers and Hayes (1981) with Bereiter and Scardamalia (1987) claim that the generation of ideas by L2 learners is affected by two important factors which are the writer's task environment and the long-term memory from where she/he retrieves information for writing. As results of this, Kellogg (1996) and Olive et al., (2009) affirm that cognitive effort is a function of the demands of the writing situation, the individual's knowledge and her/his writing skills. However, studies on second language acquisition have shown a serious deficiency in current investigations of the effects of planning time conditions and task conditions on the quality and quantity of ideas in writing (Ong, 2013).

In one of the existing studies Ojima (2006) examines the difference between writing tasks with planning and without planning on three ESL Japanese learners' written performance. Every learner wrote four essays: two planned essays and two unplanned essays. For all essays fluency was assessed as a measure of lexical complexity. The findings indicate that writing tasks with added planning time produced both greater fluency and complexity, but did not improve accuracy of language (Ojima, 2006).

Additional studies on L2 for example, the studies conducted by Kellogg (1988, 1990), Ellis and Yuan (2004) as well as Ong and Zhang (2010, 2013) focus on planning and writing, and also examine the effects of added planning time, or various task conditions or both on writing quality.

Ellis and Yuan (2004) investigate the effects of pre-task planning or planning time, on-line planning, and no planning on the fluency, complexity, and accuracy of the narrative writing of 42 Chinese ESL students. The researchers found that pre-task planning results in improved fluency and syntactic variety, whereas on-line planning results in greater accuracy. In comparison no planning time has negative consequences on fluency, complexity, and accuracy (Ellis & Yuan, 2004). Ong (2013) concludes from such results that the pre-task planners focus their attention on content and organization during planning. In the consequence, they produce overall a better text quality than no planners.

In contrast, Galbraith and Torrance's (2004) study found that the quality of writing (as measured by fluency of language, coherence of the overall argument, originality, and the appropriateness of style of writing) improves when the participants either revise without having access to their first drafts or when they write without planning.

Ong and Zhang's (2010) also examine the effects of availability of planning time, provision of ideas and macro-structure, and draft availability on fluency and lexical complexity of 108 ESL Chinese students' argumentative writing. The authors found that students in the no planning condition produced texts with a greater fluency and lexical complexity than students who wrote with an added planning time (10 minutes) or even an extended planning time (20 minutes). Additionally students who were provided with a topic and some ideas on the topic prior to the writing task (topic and ideas given condition) and students who were given both the topic, the ideas plus an outline of the textual macro-structure (topic, ideas and macrostructure given condition) produced texts with poorer lexical complexity than students who were only given a topic (topic given only condition). Consequently, Ong and Zhang's (2010, 2013) findings concur with Kellogg's (1990) interaction hypothesis according to which free-writing or no planning writing improves writing quality, fluency, and lexical complexity compared to all other conditions.

Ellis and Yuan (2004) also pose that L2 writers focus their attentional resources on content and organization of a text during planning which leads Ong (2013) to conclude that the free-writing or no planning condition produces extensively more ideas in essays compared to the diverse planning time conditions; she hypothesizes that the pre-task and extended pre-task planners might have continued planning during writing, and this additional cognitive load may have possibly impeded fluency, lexical complexity, and text quality. This is in line with Ong and Zhang's (2010, 2013) claims that L2 writers continue to focus their attentional resources on content generation and organization of ideas during writing.

These findings indicate that the task condition (i.e. pre-task planning), which was considered to reduce cognitive task demands, may have negatively influenced the writers' focused attention. Ong (2014, p.20) asserts that "[t]he learners composing with the given content and given macro

structure might have focused their attentional resources on fewer sub-processes of planning, and more on other strategic aspects of writing such as organizing essay structure and attending to language aspects of text production compared to the writers composing with only the given task prompt.”

Galbraith’s (1992, 1999, 2009) study asserts that in order to understand the benefits of synthetic planning (writers do not pre-plan and write spontaneously), especially on the quality and quantity of ideas produced, we need to experiment on different ways in which reducing the cognitive load of the writing task may improve second language learners’ written texts. In addition, Manchón and Roca de Larios (2007) investigate whether L2 writers’ proficiency levels, the language of composition (L1, Spanish vs. L2, English), or the stages of the composition process affect the time writers spent on planning processes. The researchers found that L2 writers’ language proficiency levels influence the amount of time they spend on planning in both L1 and L2 writing tasks; however, the language of composition (L1, Spanish and L2, English) does not affect the time spent on planning processes (Ong, 2014, p. 18).

Previous studies on the proficiency and dependency of cognitive activity while writing – for example studies conducted by Cumming, (1989); Roca de Larios, Murphy and Manchón, (1999), as well as Galbraith (2009) – found that L2 proficiency is related to a more balanced allocation of processing time to different composing activities. This suggests that the ability of L2 writers to make their composition processes interact increases along with their command of the L2 (Roca de Larios et al., 2008). Furthermore, Roca de Larios et al., (2008) identified how proficiency influences the allocation of attentional resources to different composing activities in terms of time. Their data indicates that, “[...] as proficiency increases writers appear to be able to strategically decide what attentional resources to allocate to which writing activities at which stages of the writing process” (Roca de Larios et al., 2008, p.43). They also identified that proficiency has an effect on the possibility of writers regulating their composition processes. Self-regulation affects the writer’s mental model during the writing process and is understood to operate over a whole set of concepts and beliefs that underlie and guide writing performance (Cumming, 1989; Roca de Larios et al., 2008, p. 43).

The above comments clearly indicate a limitation of the classical model of composition which views writing as a purely linear process. Rather the writing process is recursive as proposed by Flower and Hayes (1981). Roca de Larios et al. (2008,p.44) concur with Flower and Hayes and argue further that “[...] writing cannot be conceived as a kind of linear progression from planning to formulation and then to revision, nor can it solely be seen as an activity in which time can equally be allocated to any process at any stage of the composition.” Overall, current findings indicate that the use of writing strategies is a control mechanism that employs the writers’ mental models.

More so, the study conducted by Baaijen (2012, p.116) examined the effects of planning and self-monitoring ways which writers use to develop ideas through writing. The participants were 84 ESL students from the Faculty of Arts of the University of Groningen. The study identified that the ways in which the students develop their ideas are related to the text quality as well as the development of their understanding of the second language.

Baaijen (2012) hypothesizes that strategic rhetorical planning is useful for the production of good quality text, but that is limiting the extent to which writers can use writing as a process of discovery. This implies that, outline planning might increase text quality and the retention of ideas, whereas synthetic planning which is the summing up of an overall opinion of a topic prior to writing (writers not to pre-plan but to write spontaneously) might lead to changes in the understanding and the production of more new ideas, particularly for students with low self-monitoring skills in the synthetic planning condition.

2.7. Theoretical Framework

In this section I present the theoretical framework of the current research, i.e. Galbraith’s (1999, 2009) knowledge constituting model and its application to my research. Subsequently I present the limitations of my research.

2.7.1. Introduction

Galbraith's (1999, 2009) knowledge constituting model was chosen as the theoretical framework for this study as it attempts to explain how ideas are developed in writing. The model details the cognitive processes underlying the discovery of ideas (Ong, 2013). The use of this framework will enable me to examine the impact of various planning times and task conditions on the writing task, and to emphasize the importance of the task environment for the generation of ideas.

Galbraith's (1999) forerunner of the knowledge constituting model is called the dual process model of writing in which effective writing is assumed to be the joint product of two conflicting processes: The first of these processes is the knowledge retrieval process involving the retrieval of already formed ideas from an explicit knowledge store in long term memory. These ideas are subsequently directly translated into text as proposed in Bereiter and Scardamalia's (1987) knowledge telling model. The second process is developed in the knowledge transforming model by the same researchers and it consists in evaluating and manipulating the ideas in a goal directed way prior to translating them into text (Bereiter and Scardamalia, 1987).

Galbraith's overall aim is thus to investigate how ideas are generated (i.e. how knowledge is constituted) during text production and how different factors interact with this knowledge constituting process. These factors are: a- the planning process; b- the writers' prior experience with writing; as well as c- external constraints i.e. the topic and the particulars of the writing task. Galbraith (1992) considered the development of writers' subjective understanding of topics under different writing conditions and measured the extent to which writers developed new ideas as a function of writing in these different writing conditions. He said that the knowledge constituting model enables writers to capture the varied ways in which translating can be carried out by writers during the writing process; it clarifies the nature of discovery in writing; it provides a theoretical rationale for different drafting strategies; and it helps to guide the design of empirical research (Galbraith and Trent, 2009, Galbraith, 2009a).

Galbraith (2009a, p. 20) proposes that "[t]here is a relationship between cognitive and social and motivational processes in which the processes employed by writers affect their motivation, and their motivations influence the processes they employ". Galbraith (1992, 1999) concludes that

there are two conflicting possibilities of how ideas could be discovered during the writing process: Either when writers generate content (synthetic planning) or when writers aim to meet their rhetorical goals (planning).

Hence, there seems to be a fundamental conflict in writing between top-down controlled processes (planning) which operate best on the basis of a fixed representation of ideas and bottom-up spontaneous processes (synthetic planning) which operate best when ideas are constituted, discursively, in the course of text production (Galbraith & Trent, 2009).

In the model, it was assumed that this conflict can be reduced by employing different strategies at different points during the writing process (Galbraith & Trent, 2009; Baaijen, 2012, p. 48). For example, outlining is assumed to optimize explicit organizing processes (i.e. top-down processing); whilst spontaneous text production is supposed to optimize knowledge constituting processes (i.e. bottom-up processing). Writers are assumed to alternate between these two strategies (outlining versus spontaneous text production) depending on which process is currently preferred, where top-down controlled processes are held to serve rhetorical goals while bottom-up processes are held to fulfil dispositional goals.

Dispositional goals, on the one hand, are characterized by the writer's need to express their knowledge 'as it comes to mind' about a topic. It leads to the production of an unorganized or dispositional text. The writing process in this case is assumed to operate through parallel constraint satisfaction within the writer's semantic memory; content is created by planning a series of explicit propositions. These propositions are realized as sentences in the text which are not necessarily linked by top-down planning.

Rhetorical goals, on the other hand, are about what to say and most importantly about why to say it. Rhetorical planning is assumed to operate on an episodic memory of previously entertained propositions (ideas that the writer has read or heard in the past). Ideas are retrieved from this memory and writers vary in the extent to which memory search is guided by their rhetorical goals. In cognitive models for writing, this is typically characterized as involving active problem solving to satisfy rhetorical goals (Baaijen, 2012).

The differentiation between rhetorical and dispositional goals is based on the earlier work of Bereiter and Scardamalia (1987) who differentiate between the "knowledge telling" approach

(i.e. dispositional planning) used by novice writers, which simply involves retrieving ideas prompted spontaneously by the topic and translating them directly into text and the “knowledge transforming” approach (i.e. rhetorical planning) used by expert writers, which involves developing an elaborate set of goals for their text, and generating ideas in order to satisfy these goals. It is assumed that differences in the extent to which writers prefer either of these processes are a key source of individual differences in approaches to writing (Baaijen, 2012).

The differentiation between novice and expert writers also plays a fundamental role in Galbraith’s work. Galbraith developed his ideas for the knowledge constituting model in 1992 during his investigation on how writers develop content understanding through writing. In the development of his model, Galbraith used Snyder’s (1986) self-monitoring scale (Baaijen, 2012, p.12) to distinguish between ‘high self-monitors’, i.e. writers whose writing is assumed to be directed towards rhetorical goals and ‘low self-monitors’, i.e. writers who prefer to generate ideas as they ‘come to mind’ and who thus follow dispositional goals.

Furthermore, Galbraith examined the effects the two planning conditions, namely planning (i.e. following rhetorical goals) and synthetic planning (i.e. following dispositional goals), on the quantity of new ideas produced by either high or low self-monitors. According to Galbraith and Trent (2009) the planning condition requires the writers to plan before writing, whereas the synthetic planning condition requires writers not to pre-plan but to write spontaneously.

Galbraith (1992, 1999) identified that more new ideas are generated by the high self-monitors than by low self-monitors in the planning condition (planning before writing); however, more new ideas were produced by the low self-monitors than the high self-monitors in the synthetic planning condition (planning during writing). The overall outcome of his findings is that synthetic planning is better than planning. This is reflected in Ong’s (2013, p.530) summary of Galbraith’s findings “[t]he main theoretical postulation of Galbraith’s (1999) model is that synthetic planning leads to a discovery of more novel ideas, produces more coherent ideas, increases readability of the texts, and enhances the writer’s topic knowledge, compared to planning.”

Chenoweth and Hayes (2003) state that text production may affect not only the extent to which the writers are able to engage in higher level planning, but also the ability of the writer to capture

momentary thoughts as they occur in the course of text production. In his dual-process model of writing, Galbraith (1999, 2009) goes further than this, however, and claims that spontaneous text production is an active knowledge-constituting process on its own. The knowledge constituting model (Galbraith, 1999 and 2009) claims that writing requires the active organization of a writer's personal understanding of a given topic. Baaijen (2012, p.107) concurs with this claim and poses that "[...]once writers have externalized their own understanding of the topic in written output, this consequently enables them to reflect on their present understanding in relation to the audience for their text and to evaluate the expression of their ideas in respect to the requirements of the intended text. This explicit reflection process is assumed to lead to discovery, especially when it leads to the expression of new content."

In a series of experiments investigating how writers develop new ideas through writing, Galbraith (1999, 2009) revealed that writers do develop their ideas in a more detailed way when they produce pre-writing notes than when they try to produce a fully developed text while they are engaged in text planning. He also found that the production of new ideas is enhanced by the production of spontaneous drafts as compared to the production of fully developed text. In essence these ideas are associated with the development of the writer's personal understanding of the topic. In addition Baaijen, (2012, p.13) asserts that Galbraith characterizes this as a knowledge constituting process because fundamentally knowledge is constituted in the process of language production: This means that idea generation during text production involves the synthesis rather than the retrieval of content.

Crucially, Galbraith's (1999, 2009) knowledge constituting process model claims that while writing, the two aforementioned processes (i.e. the rhetorical process and the spontaneous text production process) occur together at the same time. Baaijen (2012, p. 48) concurs that both processes, i.e. the explicit organizing process (i.e. planning) and the implicit text production process (i.e. synthetic planning) are required for effective writing. The explicit organizing process is required to impose structure on the text, to set explicit goals, and to tailor the text to the needs of the reader while the implicit text production process is guided by the implicit structure of semantic memory which is required to constitute the writer's personal understanding of the topic. Baaijen (2012, p.108) hence strengthens the notion "discovery of ideas through writing" in Galbraith's (1999 and 2009) model of knowledge constitution which says that the

discovery of ideas occurs during text production and that therefore text production should not be treated as a passive process of translating preconceived ideas into written output, but rather as an active knowledge constituting process which involves the generation of novel ideas.

Text production may be influenced by external constraints. In Galbraith's model these are restricted to topic and task specifications, henceforth called "topic and task specs" as in Galbraith's work. Galbraith's (1999, 2009) knowledge constituting process is a process of discovery that entails cognitive problem solving. Baaijen (2012) asserts that the most developed cognitive problem solving during writing is indeed the process of discovery. However, writers have to identify the rhetorical context by establishing what their goals are for the text and how they want to present their ideas in the rising text. These goals will then function as constraints within which the writer searches her/his memory for related content and develops ideas for insertion in the text. This process is described as a dialectical interaction between a content problem space and a rhetorical problem space (Bereiter and Scardamalia's, 1987, p.303). It is suggested that the interaction between the two problem spaces may be responsible for discovery through writing.

Galbraith (1999) states that writing depends on two sets of constraints; the first set of constraints contains the input constraints represented by "topic and task specs"⁶; the second set of constraints contains the mutual constraints between the units within a distributed semantic memory network (see Figure 2.4), which consists of positive or negative directional and interconnected units (Ong 2013).

Meanwhile, topic and task specs include the writer's representation of the rhetorical problem and the space where problem-solving processes are carried out (Ong 2013). This is equivalent to the mental representation of task spaces in which problem translation processes occur within Bereiter and Scardamalia's (1987) knowledge transforming model. The function of topic and task specs is to provide input to writing and to evaluate the output of sentence production. In other words, the writers has to continuously evaluate whether a current sentence fits with the overall topic of his writing task and the specifications of the writing task for (e.g. hearer model, language register, etc.)

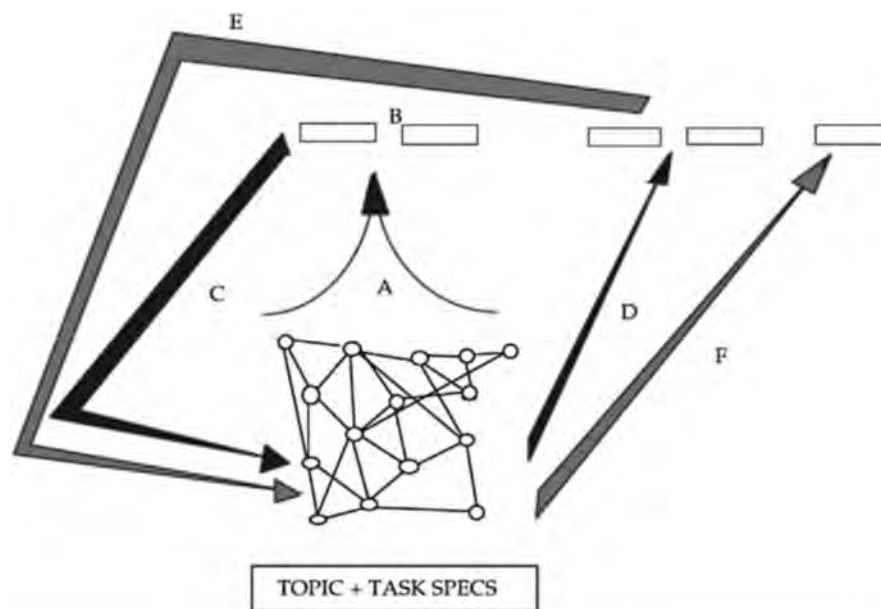
⁶ The abbreviation "specs" is used by both Galbraith (1999, 2009) and by Ong (2013) to name the task specifications. Here and in the following text I use their conventions.

2.7.2. Application of the theoretical framework to the study

The following, commonly used figure, (here taken from Baaijen, 2012, p 35) represents Galbraith's (1999) knowledge constituting model. It shows the interaction between the semantic networks, represented as a network of interconnected nodes/units in the centre of the figure.

The letter A labels the writer's linguistic knowledge (syntactic and lexical representations). The letter B labels the linguistic output representations, i.e. the propositions that are sequentially produced during the writing process: the rightmost representation in B is the final version of the proposition; i.e. the message that the writer wants to convey. The letter C labels a feedback process from the first version of the proposition (B) to the semantic network. The letter D represents the process which updates the proposition after the feedback process. Letter E represents a subsequent feedback process while letter F represents the updated output process after the second feedback (Galbraith, 1999, Ong, 2013 and Baaijen, 2012, p 35).

The feedback loops have the function to enable the network to produce new ideas during the circles C-D and E-F without requiring a change in the input from the topic and task specs (Galbraith, 1999, p. 145).



*Figure 2.4: Diagram of Galbraith's (1999) knowledge constituting model
(from Baaijen, 2012, p.35)*

Galbraith (1999), Ong (2013) and Baaijen (2012, p 35) hold that the network of interconnected units/nodes in the middle of the diagram represents the writer's knowledge which is stored implicitly as the connections between the units/nodes.

The inputs to this network are the external constraints (i.e. the topic and task specs); they activate the units within the network which then pass activation to the circular processes (C-D and E-F) within the network, until the network gradually settles into a stable state. The final state of activation of the units corresponds to the message that the writer wants to convey and this message may be considered new content when the message that is produced does not relate to ideas stored in episodic memory (Baaijen, 2012 p 36).

Hence, to create new content, the writer has to engage in a knowledge constituting process, involving the synthesis of content. This synthesis is guided by the connections between sub-symbolic units stored in the implicit semantic memory system. The synthesis process can be prompted by higher level problem solving demands; however, the content produced as an outcome of the synthesis process is the product of the implicit organization of content in semantic memory, rather than the outcome of an explicit manipulation of content in working memory (Galbraith & Trent, 2009, p. 18).

The model makes two claims concerning the knowledge constituting process. The first claim is that during text production ideas are created by constraint satisfaction within semantic memory rather than being retrieved from episodic memory. In this way, the model can be seen as a proposal about how 'the proposer component' in the model of Chenoweth and Hayes (2003) produces the 'idea package' which serves as the input to the translator component. The main result of this way of conceiving of the proposer is to emphasize the transient nature of ideas during text production; they are not fixed ideas retrieved from long-term memory but are temporary activation patterns across the set of units constituting the semantic memory of the writer.

The second claim is that a sequence of utterances does not necessarily need to be the product of explicit planning in between stages of synthesising content (Galbraith & Trent, 2009, p.18). Galbraith (1999) suggests that when inhibitory feedback from a previous utterance serves as input to semantic memory it consequently reduces the activation of units corresponding to the

preceding utterance so that, without any change in the writer's goals, subsequent stages of synthesising content will correspond to the 'remainder' of implicit content in semantic memory. This allows thought to be 'sdf-moving', with each utterance causing subsequent utterances. Galbraith and Trent (2009, pp.18-19) argues that there are two key features to this:

The first is that, because the writer does not have direct access to the constraints within semantic memory that guide the synthesis of content, they only become aware of the content of any given utterance at the moment it is created. Second, because any given utterance is only a partial representation of the content of semantic memory, in order to capture the content implicit in semantic memory, the writer has to allow the process to unfold without interruption by explicit planning. Their understanding is constituted by the interaction between successive utterances and the implicit content of semantic memory, and in order to articulate it they have to allow the process of text production to unfold without interruption.

The above quote indicates that the model is used to illustrate the distinctions between different forms of text production; the relation between writing and discovery, and lastly, the interaction between explicit problem-solving processes and implicit knowledge constituting processes during writing (Galbraith & Trent, 2009, p. 19).

This description of text production as a knowledge constituting process has an implication for writing in the L2, coming from the fact that language is produced in bursts, the size of which appear to be reduced in L2 (Chenoweth & Hayes 2003). If these bursts play a constitutive role in the development of the writer's understanding, as the knowledge constituting model claims, then the reduced size of the bursts in L2 should change, and possibly decrease, the extent to which writing in L2 leads to such developments. This could be tested by replicating the measures used in Galbraith's experiments, and comparing the extent to which writers develop their understanding in both L1 and L2 (Galbraith & Trent, 2009, p. 19).

A second important implication arises from the conflicting nature of the two sources of content organization, as assumed by the dual process model, which are both required for effective writing. The knowledge-retrieval process organizes content in terms of the relationships between pre-existing ideas in explicit memory and the writer's rhetorical goals (Galbraith & Trent, 2009,

p. 19). In contrast the knowledge constituting process is guided by the implicit organization of the writer's semantic memory. Galbraith (2009a) suggests that this is not simply a cognitive conflict. Rather the choice between these processes at any given time is closely related to the writer's conception of self. The priority given to the two processes depends on the extent to which the writer is motivated to present a coherent self-image to the reader via goal directed planning or to actualize the potential within their implicit disposition towards the topic through spontaneous production of text (Galbraith & Trent, 2009, p. 19).

Writing in L2 may influence the balance between these two processes in a number of ways. On one hand, to the extent that writing in the L2 is a more self-conscious process than writing in L1, it may lead the writer to prefer explicit planning processes more than he/she would in L1. This is not to say that the explicit planning processes would be carried out more extensively. Instead, writers may shift their attention to satisfying more formal constraints on the text at the expense of concentrating on the extent to which the text captures and articulates their personal understanding.

On the other hand, to the extent that the writer finds it harder to articulate their personal understanding in L2, their motivation to write may be decreased. If one of the factors motivating writers is the sense that they are developing their understanding while writing, then any reduction in their capacity to do this may reduce their motivation to write (Galbraith & Trent, 2009, p. 19).

In summary, Galbraith's (1999, 2009) model draws on connectionist principles to explain the implicit generation and preparation of new ideas in the translating process. According to Ong (2013, p.531) the translating process is affected by four factors: The first is the complexity of connections between the idea units in the distributed semantic memory network. The second is the number of idea units which are activated by the topic and task specs. The third is the writer's linguistic knowledge, and the last factor is the writer's use of strategies for translating such as synthetic planning and planning strategies. The current study will consider the third and the fourth factors as these are demonstrable in empirical research (see Ong, 2013). Also, because this study is empirical study and it investigates preparation time or planning time in academic writing so this study has already considered these factors as Ong (2013) had done in her study.

2.7.3. Limitation of the theoretical framework

Despite the usefulness of Galbraith's (1999, 2009) framework to this study, it has limitations. Munneke and Andriessen (2000) assert that the model is not sufficiently investigated and it remains unclear which conception of knowledge Galbraith (1999, 2009) uses. Moreover, in the model there is hardly any space for collaboration during the actual writing process of a text. By collaboration I mean that two or more writers engage in the text production itself from the start. According to Munneke and Andriessen (2000), Galbraith's model has no provisions for such a situation because the consequence of Galbraith's architecture would be that interaction between the writer's disposition and the written text is mandatory for the writing process. Hence if there is a second person involved in the writing process, this dialectic (the direct interaction between the writer's mind and the text content) would be automatically disturbed and in the consequence a writer would not be able to clearly understand his own disposition and would be unable to construct new knowledge. It therefore appears that in Galbraith's model the only space for collaboration would be during the revising phase of a text, which appears to be undesirable.

An additional criticism on Galbraith's model is raised by Alamargot and Chanquoy (2001) who pose that outline planning – which is promoted in Galbraith (1999) – prematurely imposes order on thought and it may obscure the writers' emerging conception of the topic while in rough drafting text has to be revised to conform to external constraints.

Despite this criticism I shall use this model. First, I am not investigating collaborative writing. Second, in my study I systematically vary the planning conditions which enables me to juxtapose writers who do not engage in any previous planning with writers who do so to a varying extent.

2.8. Conclusion and outlook of the literature review

The chapter presents previous L1 and L2 research studies which examine the role of planning time and different task condition during the writing processes, and it examines findings which identify the effects of planning time and task conditions on the quality and quantity of ideas in writing. The above literature and a description of the theoretical framework have indicated the need for more studies which intent to close the gap on the paucity of research with respect to the

effect of planning time and task conditions on the quality and quantity of ideas generated by ESL writers. It is this paucity of research that I wish to address by conducting empirical research and by looking at how the idea generation process is affected by planning time conditions during the writing task which might assist in finding ways of improving ESL learners' written text. In the next chapter I present a discussion of the methodology used.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes in detail the research methodology employed to conduct this study. The previous chapter reviewed the literatures and the theoretical framework that were used. In this chapter, I will examine the research design employed to conduct this study. More so, the paradigm, research methods and techniques, sampling issues, access to data sources, data collection, analysis techniques and procedures, as well as the ethical issues relevant to the study including issues regarding the validity and reliability of the study will be examined.

This study is an experimental study, and its purpose is to examine the effects of three planning time conditions; planning time, extended planning time, and no planning time and two task conditions namely topic given and topic and ideas given. The study will focus on the quality and the quantity of ideas produced in the planning notes and essays of 30 English Second Language (ESL) learners at a South African University in Kwa-Zulu Natal. In this study, ~~A~~ random sampling method was chosen to give every member of the study population an equal chance of being included in the sample, and to prevent an experimenter bias” (Christiansen, Bertram & Land, 2010, p. 43).

The study aims to answer one main research question and three sub questions which are:

How is the idea generation process affected by various planning time and task conditions?

The sub- questions underlying the study are:

- a) Which of the three planning time conditions produces a better quality and a larger quantity of ideas in the planning notes or in the essays?
- b) Which of the two task conditions produces a better quality and a larger quantity of ideas in the planning notes or in the essays?
- c) What effect does the interaction between planning time conditions and task conditions have on the quantity and quality of ideas produced in the planning notes and essays?

3.2. The research design

This research is framed by the following over-arching features: quantitative methodology, post-positivist paradigm, research style (experimental) and context. The context of the research encompasses the location, participants, data generation methods, data analysis and interpretation. In addition I discuss issues of validity and reliability as well as ethical considerations. This section starts by discussing the paradigm employed by the research which is post-positivist.

3.2.1. Post-positivist paradigm

A paradigm is a way of looking at the world. Neuman (2006, p.87) asserts that it is the way in which we observe (using sense of sight, touch, taste, hearing and smell), measure and understand social reality. This approach to research differs from the interpretive paradigm which is to understand individuals' interpretations of the world around them and their experiences. The post-positivist paradigm also differs from the critical paradigm which tries to emancipate or transform society (Neuman 2006).

The paradigm that informs this study, however, is the post-positivist' paradigm whose aim is to interpret natural laws in order to predict or control events (Christiansen et al., 2010). The post-positivist paradigm is called the scientific method in both the social and the natural sciences; the purpose of research in this paradigm is to prove and disprove a hypothesis (Christiansen et al., 2010, p.22). Maree and Pietersen (2007a, p.65) note that for "[...] post-positivist researchers' reality is created by the individuals involved in the research and not a fixed entity." Therefore in the post-positivist paradigm reality is multiple, objective and mentally constructed by the individuals" (Maree & Pietersen, 2007a, p. 65).

In addition, the aim of the post-positivist researchers is to avoid being biased by not allowing the researchers own values and beliefs to interfere with their research (Christiansen et al., 2010). In this study I chose the post-positivist paradigm as my worldview in order to interpret the effects of three planning time conditions; "no planning time", "extended planning time", and "planning time" and two task conditions namely "topic given" and "topic and ideas given" on ESL learners' writing.

Moreover, in the post-positivist paradigm, it is assumed that there is one truth about natural or social events and we can never come to know this truth completely; thus we have to try to get closer to the truth. This approximation to the truth is attempted by making use of methods that enable us to draw correlations between variables (Christiansen et al., 2010). Sarantakos (2005) poses that a correlation is a method that examines the relationship between two or more variables; or the direction of a correlation, and determines, first, whether an existing correlation is positive or negative and, second, if the strength of a correlation or an existing correlation is strong or weak. Christiansen et al., (2010) also indicate that correlations are not about one phenomenon causing the other; it might be that two variables tend to occur together and underlying factors might be causing those variables to co-occur.

Therefore, this study fits in within the post-positivist paradigm because by using an experimental method to collect quantifiable data I aim to detect correlations between the effects of three planning time conditions and two task conditions with respect to the quality and quantity of ideas produced by 30 ESL students while examining the idea generation in L2 academic writing.

Cohen, Manion and Morrison (2011, p.15) assert that when a researcher decides to employ the post-positivist paradigm there is a "[...] concern for control and thereby its appeal to the passivity of behaviourism and for instrumental reason is a serious danger to the more open ended, creative, humanitarian aspects of social behaviour". More so, researchers indicate that the post-positivist approach reduces behaviour to techniques (Cohen et al., 2011).

Despite these limitations mentioned above this paradigm was specifically chosen by me to conduct this study because it might assist me in establishing valid and reliable evidence in better understanding the process of idea generation in L2 academic writing and by examining the effects of three planning time conditions and two task conditions on the quality and quantity of ideas produced by ESL students. I would have liked to combine the chosen paradigm with elements of the interpretive paradigm but both the scope and the time limitation of the current study do not allow this addition.

3.2.2. Research methodology

Research methodology is seen as the study of methods in which knowledge is acquired and also assists to develop the work plan for one's research (Christiansen et al., 2010). This study is situated within the quantitative research approach. Maree and Pietersen (2007a, p.145) define the quantitative approach "[...] as a process that is systematic and objective in its ways of using numerical data from only a selected subgroup of a universe or population to generalise the findings to the universe that is being studied".

The quantitative approach is based on numerical data; quantitative data are generated when breadth is required or when one wants to answer the 'what' questions (Christiansen et al., 2010, p. 36). They are also used when researchers want to establish correlational or causal relationships (Christiansen et al., 2010, p. 36).

Quantitative research is often taken to be identical to positivist research. The 'positivist element' is reflected in the ontological and epistemological descriptions as well as in the presentation of the theoretical background of the quantitative methodology (Sarantakos, 2005). Struwig and Stead (2013) pose that quantitative research is characterised by more representative respondent samples than other approaches. Therefore the quantitative researchers are said to be closer to reality; they study reality from the inside; use open methods for data collection and they also capture the world in action.

Quantitative research is often described as being mainly about the replication of findings. Sarantakos (2005, p. 80) concurs with this statement by noting that quantitative research is applied "[...] where it is required that studies should be conducted in such a way that they can be repeated by other researchers to allow validity checking and some more comparisons." This indicates that quantitative research is supposed to guarantee an absence of subjective influence by the researcher over the research study and aims at full objectivity in the procedure of the research while generating data. The results are expected to entirely reflect the reactions of the respondents, so the same outcomes are achieved each time a study is repeated (Sarantakos, 2005; Christiansen et al., 2010).

Quantitative research has shortcomings however; Altman and McDonald (2007) and Matveev, (2002, p. 3) even indicate that current quantitative research methods may be deeply flawed because according to the authors quantitative research generates limited outcomes due to closed type questions and structured formats. Thus, quantitative methods may not encourage the evolving and continuous investigation of a research phenomenon (Matveev, 2002, p. 3). Moreover quantitative methods do not seem to have the ability to completely control the environment in which respondents provide answers to research questions.

Despite the limitations of the quantitative research paradigm I follow a quantitative approach in this study which was used to investigate the original set of research goals. The aim was to arrive at an objective conclusion. In particular I set out to test Ong's (2013) hypotheses in a South African context and aimed at contributing to understanding the causality underlying idea generation in academic writing (Matveev, 2002). Conducting a similar study in another context according to Sarantakos (2005) permits valid comparisons and more legitimate generalisations than can be derived from isolated studies.

3.2.3. Research style

The purpose of research style or design varies according to “[...] the nature and purpose of the study, the type of population, the structure of the research, the number of researchers and research assistants, and the ideological affiliation of the researcher, among other factors” (Sarantakos, 2005, pp. 105 and 106). Research design offers a guide that directs the research action, order and clarity in the process of study and also it makes replication easier and more effective (Sarantakos, 2005). There are different ways of doing research such as an ethnographic research, case study, surveys, as well as experimental research (Christiansen et al., 2010).

This research study adopted an experimental design to examine the effects of three planning time conditions (planning time, extended planning time, and no planning time) and two task conditions (topic given vs. topic and ideas given) on quantity and the quality of ideas produced in the planning notes and essays of 30 English as a Second Language (ESL) Zulu students. Ong (2013, p.533) claims that “[...] experimental studies are regarded as a gold standard in research methods in Second Language Acquisition (SLA) and Cognitive Psychology.” Christiansen et al., (2010, p.39) assert that “[...] an experimental study or design uses methods of quantitative

research with the aim to discover if there is a causal relationship between different variables.” Maree and Pietersen (2007, p.149) also note in support of experimental designs that these are developed to answer a specific kind of research question namely the cause and effect question such as: does a specific treatment have any effect on some dependent measure (dependent variable)? Furthermore, Maree and Pietersen (2007a) highlight three distinguishable characteristics of an experimental design which are:

- Manipulation: This indicates that some of the participants receive some kind of treatment while others do not.
- Control: This indicates that some of the participants are used to control by not receiving the treatment.
- Randomisation: This is used to assign the participants to different groups.

Sarantakos (2005) stipulates that the purpose of experiments is twofold, namely to test hypotheses and to develop theories. He further argues that an experimental design consists of the choice of a subject, the establishment of controls and conditions required for the test. Thereafter a pre-test of the dependent variable is carried out, followed by the re-testing of the dependent variable after the stimulus has been introduced. The final step consists of the evaluation of the results (Sarantakos, 2005, p. 182).

My study strictly applied a controlled measure to determine the amount of planning and writing time given to the students in the writing task in order to draw insights on the question whether more ideas were generated during the planning or during the transcription process. More so, this study tries to answer the question if a larger quantity and better quality of ideas were generated in the planning notes and the essays as a result of one of the three planning time conditions. Lastly two task conditions were controlled to see if a larger quantity and better quality of ideas were generated in either of the two different task conditions: “topic given” and “topic and ideas given”.

Cohen et al. (2011) pose that a variable is a condition, factor or quality that can vary from one case to another; it is the opposite of a constant which does not vary between cases. It can also be considered as a construct, operationalised construct or particular property in which the research

is interested in quantitative data and is always considered with the relationships between variables. Thus, experimental design follows a common process in the testing and development of theory or a hypothesis (May, 2011).

Sarantakos (2005, p. 147) claims that “A hypothesis is an assumption about the status of events or about relations between variables. More so, it is a tentative explanation of the research problem, a possible outcome of the research or an educated guess about that outcome”. Hypotheses can be generated in many ways; they can be developed through existing theories or through research findings of other studies.

Hypothesis testing is part of quantitative research, its purpose is to offer a clear framework and guide when collecting, analysing and interpreting data. It guides the research by offering directions to its structure and operation and to facilitate statistical analyses of variables in the context of hypothesis testing (Sarantakos, 2005). In many cases hypotheses serve as testing tools for the relation between variables. The validity of a hypothesis will be tested through evidence gathered by an empirical study. Hypotheses cannot be described as true or false; they can only be relevant or irrelevant to the research topic (Sarantakos, 2005; Christiansen et al., 2010). This study sets out to test four hypotheses relevant to the study which were proposed by Ong (2013).

3.2.4. Research sampling

Sampling involves making decisions about the people, setting, events or behaviour to observe. Cohen et al., (2011) asserts that sampling is a crucial element of research. The sampling theory suggests ways of drawing “scientific” samples that are random and representative of a population and whose data can tell us more about the population in general (Maree & Pietersen, 2007b, p.172). Whilst “[...] the size of the sample is different depending on your research style” (Christiansen et al., 2010, p.41). There are two major types of sampling methods:

- Probability sampling: This is also known as random sampling. In this sampling method, the chances of members of the wider population being selected for the sample are known; every member of the wider population has an equal chance of being included in the sample and their inclusion and exclusion from the sample is a matter of chance (Cohen et al., 2011; Maree & Pietersen, 2007b). There are different types of sampling methods

under probability sampling namely random sampling, systematic sampling, stratified sampling, cluster sampling, multi-phase sampling and stage sampling.

- Non probability sampling: This kind of sampling method is also known as a purposive sampling. In this kind of sampling method every member of the wider population does not have an equal chance of being included in the research sample and the researcher has deliberately selected a particular section of the population to include and exclude from the sample (Cohen et al., 2011; Maree & Pietersen, 2007b). Several types of sampling methods have been identified under the non-probabilistic sampling methods such as convenience sampling, quota sampling, purposive sampling, dimensional sampling, snowball sampling, volunteer sampling, and theoretical sampling.

Hence, a purposive sampling method was chosen by me to choose the location of the current study. According to Nieuwehuis (2007) purposive sampling involves the selection of the research locations, incidents, events and activities to be included for data collection. In purposive sampling “[...] the limitation in terms of representing the population and generalising the results to the population should always be kept in mind” (Maree & Pietersen, 2007a, p.177). In this regards, I chose this specific institution using purposive sampling to conduct my research study because I live close to the campus where this study was conducted and because I am also studying at this particular campus which gave me an easy access.

In order to recruit the participants of the current study I employed a random sampling method (Sarantakos, 2005; Christiansen et al., 2010, p. 43; Cohen et al.; 2011; May, 2011). May, (2011, p. 101) notes that “[...] getting a sample size depends on the size of the population, the amount of variability in the measure and the size of the effect to be captured and it is worth noting that a large population may not necessarily require a larger sample size and the greater the variability in the variable, or what is being measured, the larger the required sample size”. I adopted the random sampling in order to achieve the required sample size for the research study. Cohen et al., (2011, p.153) claim that “In a random sampling each member of the population under study has an equal chance of being selected and the probability of a member of the population being selected is unaffected by the selection of other members of the population i.e. each selection is entirely independent of the next.”

Weathington, Cunningham and Pittenger (2010) also attest to the above claim that random sampling occurs whenever each member of the population has an equal probability of selection. This clearly indicates that random sampling is very important for experimental research and aims to draw conclusions about the wider population from a quantitative study. Struwig and Stead (2013) also pose that the random sampling is regarded as the most accurate method used in scientific research although the chosen sample might not always be a “precise replica of the universe” and also, with this sample the researcher aims to collect data that has a similar distribution to the population value. The aim of the random sampling is to minimize the differences between the true population value, known as the parameter and the value collected in the sample, as the sample statistic (May, 2011). However, the study by Cohen et al., (2011) argues that one problem associated with the random sampling method is that theoretically a complete list of the population is needed and that such a list is not always available.

I conducted a random sampling in order to choose my sample of participants from the complete list of students enrolled in the ACLE module during the first semester of 2015 by the following three steps: Firstly after gatekeeper permission was sought and obtained from the university I went to the cluster of Languages, Linguistics and Academic Writing in the School of Arts and asked for the numbers of the first year students enrolled in the Academic Learning in English (ACLE) module which is a specific support module for those first year students who need to develop their academic writing skills.

Unfortunately I was not able to recruit more than thirty participants for the current study despite giving the students incentives for their participation (a free lunch, a pen and a notepad) and advertising my research ahead of time. I went to the relevant lectures of the ACLE course to introduce myself and my research. However, students were generally reluctant to invest 40 minutes of their time to assist research. In conversations with my supervisor, other academics and postgraduate students I found that this is a common problem with conducting empirical research at UKZN. I might have been particularly unfortunate in my recruitment efforts because the first semester 2015 was riddled with student unrest and strikes and students might have been especially worried about spending time on research.

In the final step, I managed to recruit thirty individuals as participants in my study. Cohen et al., (2011) indicate that where simple random sampling is used, the sample size needed to reflect the

population value of a particular variable depends both on the size of the population and the amount of heterogeneity in the population.

The participants were divided into three experimental groups which were tested individually in three convenient venues; each group was given the same topic to write a short essay. However, each group wrote the essay under one of three planning time conditions (planning time condition (10 minutes), extended planning time condition (20 minutes), and no planning time condition. Table (1) provides a summary of the composition of the experimental groups according to the planning time conditions.

	Gender and Age		
Conditions	MALE	FEMALE	AGE
Planning time	7	3	18-25
Extended planning time	4	6	18-19
No planning time	3	7	18-20
Total	14	16	

Table 3.1: The distribution of the participants across three planning time conditions

In this study, there were an almost equal number of females (14) and males (16). The mean age of the participants was eighteen years, and the range of ages was from eighteen years to twenty five years, and they are all in their first year of study in the university.

3.2.5. Methods of data generation

The study by Christiansen et al., (2010) shows that research in general relies on empirical information. This clearly means that research is based on the collection of data or the collection of evidence in order to answer particular questions. There are different methods of generating data used in quantitative studies for example questionnaires, tests, surveys, experiments, quasi-

experiments (Christiansen et al., 2010). In other words, researchers are required to choose the method that will be most effective in obtaining the information needed to answer their research questions. In this study I have chosen the experimental method.

3.2.5.1. The experimental design process

I employed the experimental method in order to obtain an overall linguistic proficiency score of the participants as suggested by Ong (2013), by checking the assessment of their previous marked essays.⁷ Ong (2013, p. 534) suggests proficiency levels as follows: participants were classified as high, average, and low linguistic proficiency writers; participants who scored between 68 and 75 marks were considered as high linguistic proficiency writers; participants who scored between 57 and 65 marks were considered as average linguistic proficiency writers, and participants who scored between 46 and 56 marks were considered as low linguistic proficiency writers.

However, this categorisation is not applicable to the participants of the current study: the students participating in the current study perform at a much lower proficiency rate than anticipated; their marks⁸ range from 29% to 62%. There is no even mark distribution across the group as the majority of students (n=18) fall into a very low performing group 10%-30%, while seven students fall in a 'medium' group (40%) and only five students receive marks above 50%. Thus, the students participating in the current study perform at a lower level than Ong's (2013) participants and the proficiency groups are less balanced than Ong's.

The experiment used a 3x2 between subjects' design, with three different amounts of planning and writing times as one independent factor, and with two different task conditions as the other. The dependent variables examined were quantity of ideas and the quality of the ideas produced in the planning notes and in the argumentative essays following Ong's (2013) design.

This study strictly controlled the amount of planning and writing time given to the students' in their writing task, to gain insights into whether more ideas and ideas of a better quality may be generated through the planning or through the writing process. Accordingly the participants were

⁷ This means the marks assigned by the lecturer/the tutors of the ACLE module not by the researcher and her research assistants.

⁸ These are the marks that were given to the students by the lecturer of the course not by the researcher.

divided into three groups (compare table 3.1 above). In the planning time condition group, the learners are given ten minutes to plan and twenty minutes to write. In the extended planning time condition group, the learners are given twenty minutes to plan before they write for ten minutes. In the last group, the no planning condition group, the learners are instructed not to plan but to write immediately and continuously for thirty minutes.

The reasoning for the planning and transcribing time allocation in this study is because if the planning time (10 min, 20 min and 0 min,) varies without changing the matching transcription (i.e. essay writing) time (e.g., 20 min), there would be an irregular total time on the task across the planning time conditions for example (30 min, 40 min, and 20 min) (Ong, 2013, p. 534). This irregular total time for the task might be a confounding variable influencing the results of the study, as was noted by Ong (2013, p.534) and Kellogg (1990) in their previous studies.

In addition, in each group of the three planning conditions, half of the learners are given the topic without additional ideas (topic given condition), whereas half of the learners will be given the topic, accompanied by additional ideas (topic and ideas given condition) as suggested by Ong (2013).

The two task conditions will be used to find out whether more ideas, and/or ideas of a better quality, may be generated when additional ideas are provided. To disregard the process of revision from affecting the results of the study, the students' were informed not to read, edit or revise their essays throughout the entirety of the writing process (Ong, 2013, p. 534). In other words, this study only focused on the formulation process which requires the planning and transcription processes (Ong, 2013; Kellogg, 1996). To prevent the differences in language used to plan for example L1 IsiZulu and L2 English, from interfering with the results of the study, instructions were given to all participants to plan in English (following Ong, 2013, p. 534).

The experimental conditions in overview are thus illustrated in table (3.2) below:

Planning time condition		Extended planning time condition		No planning time condition	
10 minutes planning time		20 minutes planning time		No planning time	
20 minutes essay writing		10 minutes essay writing		30 minutes essay writing	
topic given	topic and ideas given	topic given	topic and ideas given	topic given	topic and ideas given

Table 3.2: *Overview of the experimental conditions*

3.2.5.2. The writing task

An argumentative genre was chosen for the experimental writing task “[...] because such a genre requires less possibility of knowledge telling processes, and more knowledge transforming processes, which will reduce the impact of the participants drawing upon their schema for the writing task” (Ong, 2013, p.534). The topic knowledge could possibly influence the participants’ task performance (Ong, 2013), it was therefore important to select a topic which is interesting for the learners and which they have expert knowledge about. The topic selected, required the learners to argue whether the mass media (including TV, radio, newspapers and the internet) have a substantial influence on society especially on the younger generation.

3.2.5.3. Procedures

The experiment was conducted in three different convenient venues chosen by the participants and I employed two research assistants to assist me in collecting the data. I explained the whole procedure of the writing task to the participants. The learners’ in the three planning time conditions were instructed to use different amounts of planning and writing times according to the conditions illustrated in table two and suggested by Ong (2013). The time to write and plan was strictly controlled by me and the research assistants with the use of a stopwatch (Ong, 2013, p. 534). Half of the learners in each of the three planning conditions were given the topic given condition, whereas half of the learners were given the topic and ideas given condition.

3.2.6. Data analysis

Sarantakos (2005, p. 373) describes statistical processing as techniques that allow a detailed analysis of the data. One such technique will offer general descriptions of the data, and is known as descriptive analysis (descriptive statistics) while another technique focuses on relationships between variables, looking for associations (correlation) which is also known as relational analysis (relation statistics) and lastly the third form of statistical processing is significance testing which informs us about the extent to which our findings reflect the criteria of the target population, and whether the study allows generalization of the findings (Sarantakos, 2005).

There are many ways of presenting the findings; the two most common are tables and graphs (Sarantakos, 2005). The most commonly used tables are univariate tables, containing one variable. In this study I used tables to show the means and standard deviations of the scores for the quantity and the quality of ideas in the essays and planning notes as function of variations in the planning time and in the task conditions.

Moreover, Sarantakos (2005, p. 369) poses that “[...] graphs are figures that offer a visual presentation of the results.” In this study I used line graphs to show the results concerning the quantity and quality of ideas in the essays and planning notes as a function of planning time and task conditions. Moreover, I use central tendency measures (the mean) to know about the average, as it is the most common or typical value in a distribution (Sarantakos, 2005). I also use standard deviation to know how far the scores are spread around the mean (Christiansen et al., 2010). Most comparisons were performed using tukey post-hoc tests at an alpha level of .05 partial eta squared (Cohen, 1988) which are measures of the effect size reported for all significant effects in the analyses of variance (ANOVA) and t-test analyses, respectively (Ong, 2013).

3.2.6.1. Rating schemes and coding

According to May (2011, p. 115) “Coding is the way in which we allocate a numeric code to each category of a variable and the coding process is the first step in preparing data for computer analysis which constitutes the first step in mapping our observations into data”. Data from each question are stored as a discrete piece of information for analysis. Recording categories as category names limits the type of analysis that can be undertaken to simple counting, where data

recorded as numeric and entered into software packages for statistical analysis can be subjected to a greater range of statistical analysis tools (May, 2011, p. 115).

The planning notes and the essays were coded into idea units by hand. The quantification of an idea unit in the planning notes as compared to the essay differed slightly. The planning notes were written mostly in point forms and not transcribed into full sentences. An idea unit in the planning note consisted of a short phrase or a meaningful mass of words, whereas an idea unit in the essay is defined as a sentence or a clause that contains a verb or a participle and expresses one action (Ong, 2013, p. 535). For example, the following sentence below contains three idea units:

The mass media impact people differently depending on their social class and education
(1) Young people are flexible and not set in their ways, (2) hence they are willing to accept new ideas. (3)

The quantification of idea units in both the planning notes and the essays was carried out by two independent scorers. For the planning notes the percentage agreement was 89%, Cohen's $k = 81\%$; for the essays the percentage agreement was 88%, Cohen's $k = 80\%$.

To suit the aims of the present study, the rating scheme that is used to rate the quality of ideas in the planning notes is adapted from Chai's (2006) and Olinghouse and Graham's (2009) rating schemes, which were also employed by Ong (2013) and which is attached in appendix (4-5). Following Ong (2013) three scorers met on three occasions to discuss the rating procedures before starting the actual coding. The quality of ideas in the planning notes was assessed by three main features: relevance of ideas, elaboration of main ideas, and complexity of plans. Each main feature was scored on a 1-3 point scale, making up a total score of 9 points (Ong, 2013).

The quality of ideas in the essays was assessed in terms of how convincing the ideas were and how the ideas were developed throughout the essay. Specifically, the scorers were instructed to consider whether writers had stated their stand clearly, whether they had provided sufficient and relevant evidence to support their viewpoint, and whether they had developed one line of argument or had considered and refuted opposing arguments (Ong, 2013, p. 535). The quality of ideas in the planning notes and essays were independently scored by three scorers and I use the average of the three ratings in the final analysis. The inter-rater reliabilities of the quality of ideas

in the planning notes were 81% and for essays they were 87% (assessed by Pearson product-moment correlations).

3.2.7. Validity and reliabilities issues

Validity is a necessary requirement for quantitative and qualitative research (Cohen et al., 2011). Maree and Pietersen (2007a) point out that the validity of an instrument refers to the extent to which it measures what it is supposed to measure. In essence validity in a quantitative research study is evaluated in terms of its internal validity and external validity. Maree and Pietersen (2007a, p.151) assert that “[...] for the result of an experiment to be trustworthy; the experiment should have a high degree of both internal and external validity”. In addition Weathington et al., (2010, p.103) pose that “[...] internal validity is the cause and effect relationship between the independent variable and the dependent variable”.

Cohen et al., (2011, p.183) pose that “[...] internal validity seeks to demonstrate that the explanation of a particular event, issues, or set of data which a piece of research provides can actually be sustained by the data”. Therefore “[...] if an experiment has a high degree of internal validity it means that there was sufficient control over variable other than the treatment and consequently [sic!] Can be concluded that the treatment alone was the causal factor that produced a change in the dependent variable” (Maree & Pietersen, 2007a, p.151). The internal validity is concerned with question: Do the experimental treatments in fact make a difference in the specific experiments under scrutiny? (Cohen et al., 2011, p.183).

However there are several kinds of threat to the internal validity in quantitative research such as history, maturation, statistical regression, testing, instrumentation, selection, experimental mortality, instrument reactivity and selection-maturation interaction (Christiansen et al., 2010, p.46). In the current study internal validity was addressed by ensuring that the variables are controlled as fully as possible by using a 3x2 between subjects‘ design, with different amounts of planning and writing time as one independent factor, and with two different task conditions as the other. The dependent variables examined were the quality of ideas, and the quantity of ideas produced in the planning notes and the argumentative essays.

The external validity in this research refers to “[...] the extent in which the results can be generalized to the wider population, cases, settings, times or situations i.e. to the transferability of the findings” (Cohen et al., 2011, p.186; Struwig & Stead, 2013). Weathington et al., (2010) describe external validity as the type of generalization we can draw from the data we collect. There are two types of external validity which are the one pertaining to generality of findings which is a link between our sample and the target population while the other which is the generality of conclusion which refers to our ability to generalise the findings from one population to other populations (Weathington et al, 2010).

In addition, Christiansen et al., (2010) claim that to determine construct validity as well as external validity the researcher needs to define the concepts which are under study. Construct validity can be achieved when the researcher ensures that the participants in a study understand the construct – the overall conception of the study – in the same way as the researcher. Therefore in this study, external validity was addressed by delineating inclusion and exclusion criteria, describing the subjects in terms of relevant variables and assessing generalisation (following Slack & Draugalis, 2001).

Different threats have been identified by Maree and Pietersen (2007b); Weathington et al., (2010); Cohen et al., (2011) and Struwig and Stead (2013) to limit the degree to which generalisation can be made from a sample to a population or setting; among these are for example the failure to describe independent variables explicitly, the lack of representatives of available and target populations, the Hawthorne effect, inadequate operationalizing of dependent variables, sensitization/reactivity to experiment/research conditions, interaction effects of extraneous factors and experimental/research treatments, invalidity or unreliability of instruments, ecological validity and multiple treatment validity.

In contrast, Jackson (2009) assert that one means of determining whether the measure that you are using is effective is to assess its reliability. Whilst Sarantakos (2005) argues that reliability without validity is of little use; even the most reliable instrument is useless if it is not valid. Struwig and Stead (2013, p.138) pose that “Reliability is the extent to which test scores are accurate, consistent or stable therefore test score’s validity is dependent on the scores reliability because if the reliability is inadequate, the validity will also be poor”. In addition Jackson (2009) infers that reliability refers to the consistency or stability of the measuring instrument. Whilst

Sarantakos (2005, p.88) asserts that “Reliability refers to the capacity of measurement to produce consistent results and that the method is reliable if it produces the same results whenever it is repeated”. Christiansen et al., (2010) and May (2011) also note that the reliability in experimental study may be measured by the extent to which the test, measure or instrument can be repeated and still produce the same results. Therefore for a research to be reliable it must demonstrate that if it were to be carried out on a similar context then similar results would be found (Cohen et al., 2011).

It is useful to measure and interpret reliability results to gather validity scores. Sarantakos (2005, p. 91) indicates that “[...] validity and reliability are quality measures of research instruments although they are quite different in their nature and purpose; validity measures relevance, precision and accuracy, whereas reliability measures objectivity, stability consistency and precision”.

In this study, reliability was addressed by making sure that before I started the actual coding, the quantification of idea units in both planning notes and essays was carried out by two independent scorers. Moreover, I employed three scorers who met on three occasions to discuss the rating procedures and subsequently assessed the planning notes and the essays.

As the rules of reliability for experimental research assume that there is the possibility of replication, this study seeks to replicate Ong’s (2013) study, in which she used 52 Chinese-speaking ESL pre-university students, enrolled in an English Language Course at one large public University in Singapore, while I am using 30 South African students as participants studying at a South African University. More so, achieving reliability in this study was sought during the process of coding the data. In this study the inter-rater reliabilities assessed by Pearson product-moment correlations, were 81% for the quality of ideas in the planning notes and were 87% for essays as compared to 91% and 82%, respectively, in Ong’s (2013) study. For the quantification of idea units in the planning notes the percentage agreement was 89%, Cohen’s $k = 81\%$; for the quantification of idea units in the essays the percentage agreement was 88%, Cohen’s $k = 80\%$.

3.2.8. Ethical issues considered in this study

Ethics in research is mandatory, particularly with research involving humans and animals (Christiansen et al., 2010). First and foremost, permission was sought and obtained from the University of KwaZulu-Natal and the ethical clearance reference number for the current study is HSS/0045/015M. Prospective participants were issued a consent letter to sign containing details of the study with the option of participating or withdrawing at any stage of the experiment (Christiansen et al., 2010).

During the experiment, I tried to ensure that the rights of the participants were not violated throughout their writing process (Cohen et al., 2011). More so I tried to make sure that the research study is beneficial to the participants and not harmful to them (Christiansen et al., 2010). Lastly the participant's anonymity and confidentiality was guaranteed with the use of pseudonyms (Maree & Van der Westhuizen, 2007). Also I made sure to the participants that the marks of the essays will be protected and I will protect their identity should I attempt to publish the results of my study. Finally, I will make my Master's thesis available to the participants of the study so that they can raise concerns should they decide to do so. The thesis will be available in the UKZN library and I will notify the students about this.

3.3. Conclusion

This chapter described in detail the research methodology I employed. The paradigm, approach, and research design of the study were discussed with reasons for my choices. This chapter also discussed the data collection methods which aligned with the quantitative methodological approach. Furthermore, the measures undertaken to ensure the validity and reliability of the data generated was highlighted and lastly ethical issues related to the study were discussed. The next chapter focuses on the presentation, analysis and discussion of the data that emerged.

CHAPTER 4

FINDINGS AND DISCUSSION

4.1. Introduction

This chapter presents the analysis of data that was gathered from participants through semi-experimental methods. The data is presented and analysed in the light of the main research questions and sub-questions. The beginning of this chapter presents the results of this study. The data presentation is followed by a discussion of the findings and establishes relations to the findings of other studies (in particular Ong, 2013). Also, this chapter provides an answer to the main research questions underlying the current investigation which aims to examine how the idea generation process is affected by various planning time and task conditions.

The purpose of the current study is to examine the effects of three planning time conditions; ~~no~~planning time”, ~~no~~extended planning time”, and ~~no~~no planning time” and two task conditions namely ~~no~~topic given” and ~~no~~topic and ideas given”. The study compares the quality and the quantity of ideas produced in the planning notes and essays of 30 English Second Language (ESL) learners. As outlined in the methodology chapter, the investigation aims to answer one main research question and three sub-questions which are, respectively:

Main research question:

How is the idea generation process affected by various planning time and task conditions?

Sub-questions:

- d) Which of the three planning time conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?
- e) Which of the two task conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?
- f) What effect does the interaction between planning time conditions and task conditions have on the quantity and quality of ideas produced in the planning notes and essays?

In order to answer the research questions about the quantity of ideas generated, two independent scorers identified and counted each idea unit in the individual planning notes and essays that

were produced by the participants according to the procedures outlined in the methodology chapter (3.2.6.1. Rating schemes and coding). Subsequently the idea units were evaluated with respect to their quality by three independent scorers following the procedures explained in the methodology chapter (3.2.6.1. Rating schemes and coding).

In what follows I first present the results obtained with respect to the *quantity* of the generated ideas in both the planning notes and the essays for each of the two task conditions and each of the three planning conditions. Subsequently, the results from the analysis of the *quality* of ideas in both the planning notes and the essays are presented; again I compare the results for each of the two task conditions and three planning conditions. Following this I discuss the results obtained in the current study and compare them to Ong's (2013) study.

The current research yielded two types of data: First the raw data, i.e. the written planning notes and the written essays produced by the students who participated in the study. Second, the data that arose from the first round of the analysis; i.e. the scores that were provided by the independent scorers on both the quantity and the quality of the idea units in the students' writing. The following analysis focuses on the second type of data and how it was obtained.

All scores which were obtained from the independent scorers were analysed using STATA. The statistical analyses follow Ong's (2013) methods. Means and standard deviations of the scores were used to assess differences in both the quantity and quality of the ideas produced by the participants of the current study. Analysis of variance (ANOVA) and the independent sample t-test were used to assess whether any difference exists between the scores given for idea generation per task condition with respect to the quantity of ideas on one hand, and the quality of the ideas produced on the other hand. Tukey Post-hoc tests were used to identify where specific differences exist with regards to the ANOVA. Partial eta squared and Cohen's (1988) tests were employed as measures of effect size in the analyses of variance (ANOVA) and t-test analyses, respectively (Ong, 2013, p. 535). In the current study, all statistical tests which had a *p* value of less than 0.05 are considered to be statistically significant.

4.2. Effects of planning time and task conditions on the quantity of ideas in the planning notes

For the current research it is important to assess the quantity of the ideas generated under the two task and three planning conditions. The first crucial question in this context is whether a longer planning time will lead to the production to a greater number of ideas. The second crucial question in this context is whether participants generate significantly more ideas if they are given prompts of how to elaborate the topic (topic and ideas given condition) or whether the added ideas hamper the writers' creativity. Ong (2013, p. 540) indicates that the addition of ideas to a topic by a teacher or experimenter leads to the generation of less ideas by a student or participant when compared to the topic given condition (i.e. the topic on its own without added ideas). Finally the third crucial question in this context is whether we can detect any interactions between the task conditions and the planning time conditions: In other words do participants produce a maximal number of ideas if they are given extra ideas and extra time?

I present the data with respect to the means obtained from the statistical analyses. Subsequently I deliberate the standard deviations of my statistical analyses. I discuss whether high levels of standard deviation across the entire group of my participants are caused by a great inter-individual variance in writing skills between the participants of the study.

Before I present the data concerning the scores obtained for the quantity of ideas under the various task and planning time conditions, I present data on the inter-scorer reliability.

4.2.1. Scores for the quantity of ideas generated in the planning notes

The quantity of ideas was assessed as described in rating schemes and coding section of the methodology chapter (3.2.6.1. Rating schemes and coding). Two scorers independently identified idea units as defined by Ong (2013, p.535) in the planning notes in two planning time conditions (planning time and extended planning time conditions). The individual scores per scorer are presented in table (1) below:

Planning time condition				Extended planning time condition			
Topic given		Topic & ideas given		Topic given		Topic & ideas given	
Scorer 1	Scorer 2	Scorer 1	Scorer 2	Scorer 1	Scorer 2	Scorer 1	Scorer 2
20	18	11	11	36	36	11	10
8	8	3	5	11	10	17	17
23	23	8	8	15	15	14	14
29	29	10	10	23	22	11	11
19	20	13	13	21	21	35	34

Table 4.1: Scores for the quantity of ideas in the planning notes

It is evident from the table that scores are thus basically identical between the two scorers. Statistical analyses reveal an inter-scorer reliability of 89%. This means that the inter-scorer reliability in the current study for the quantity of ideas scores is higher than the inter-scorer reliability in Ong (2013, p.535), which is 83%.

4.2.2. The quantity of ideas in the planning notes: The effect of planning time conditions

Here I investigate whether the amount of planning time affected the number of ideas produced in the planning notes. The planning notes were only produced by those participants who were given some planning time; i.e. they produced their planning notes and their essays under the planning time (10 minutes) and the extended planning time (20 minutes) conditions, respectively. Of the groups who produced their essays under these conditions one group received only the topic while the other received additional ideas alongside their topic.

This comparison was conducted using a Wilcoxon ranksum (Hollander & Wolfe, 1999; and Gibbons & Chakraborti, 2011). Overall there was no statistically significant effect of amount of planning time on the quantity of ideas produced in the planning notes. The quantity of ideas in the planning notes was not affected by the planning time conditions (planning time and extended planning time conditions); ($p = 0.2558$). In other words, additional time for planning (20 minutes or 10 minutes) did not help the students to produce more ideas.

4.2.3. The quantity of ideas in the planning notes: The effect of the task conditions

In this section I investigate whether the additional ideas which were provided to those students who were given time to plan their essays before the actual writing began had an effect on the quantity of ideas that they produced in their planning notes. As previously mentioned, the planning notes were only produced by those participants who were given extra planning time; i.e. under the planning time (10 minutes) and the extended planning time (20 minutes) conditions, they had 10 minutes or 20 minutes, respectively to write down planning notes.

Overall the effect of task conditions on the quantity of ideas in the planning notes was statically significant ($p = 0.0489$)⁹. The students who were given only the topic of the essay produced on average 20 ideas in their planning notes whereas the students who were given additional ideas alongside the topic produced on average 13 ideas in their planning notes. This means that those students who were given additional ideas produced less idea than the students who were only given the topic. All ideas were produced as new ideas and did not overlap with the pre generated ideas that I gave to them.

4.2.4. The quantity of ideas in the planning notes: The interaction between the planning time conditions and task conditions

Here I investigate the interaction between the planning time and the task conditions with respect to the quantity of ideas produced in the planning notes. The results are presented in the table (2) below. A comparison of the data *within* the two major columns reveals the following: In the planning time condition (10 min), the students who were only given the topic (topic given condition) produced on average 19 ideas ($M = 19.40$); this is a statistically significantly higher mean rate of ideas [$F(1, 8) = 7.33$; $p = 0.0268$] than were produced by the students who were given additional ideas. These students only produced nine ideas on average ($M = 9.0$). In comparison, the two task conditions did not yield any statistically significant difference for the extended planning time condition (20 min) with respect to the mean rate of ideas produced in the planning notes. In particular, students who were given additional ideas produced 17 ideas on average (topic and ideas given condition ($M = 17.20$)) whereas students who were only given the topic on its own produced 20-21 ideas on average (topic given condition ($M = 20.80$)).

⁹ The numerical scores for the effect of the task conditions were compared using a Wilcoxon ranksum (Hollander & Wolfe 1999 and Gibbons & Chakraborti 2011).

Variables	Planning time condition		Extended planning time condition	
	Topic given M(SD)	Topic and ideas given M(SD)	Topic given M(SD)	Topic and ideas given M(SD)
Planning notes: Quantity of ideas	19.40 (7.71)	9.00 (3.81)	20.80 (9.78)	17.20 (9.78)

Table 4.2: Means and standard deviations of the scores for the quantity of ideas according to the task conditions within the planning time conditions in the planning notes

Notably, when we compare the effect of the task conditions *across* the two planning time conditions; i.e. the difference between 10 minutes of planning time as compared to 20 minutes of planning time we find that students who were given both the topic on its own (topic given condition) and 20 minutes of planning time (extended planning time condition) produced about 20 ideas on average ($M = 20.80$). In comparison, students who were given the topic and additional ideas (topic and ideas given condition) with 10 minutes of planning time (planning time condition) only produced nine ideas on average ($M = 9.0$). This difference was statistically significant [$F(1, 8) = 6.32$; $p = 0.0362$] and is visually presented in figure (4.1).

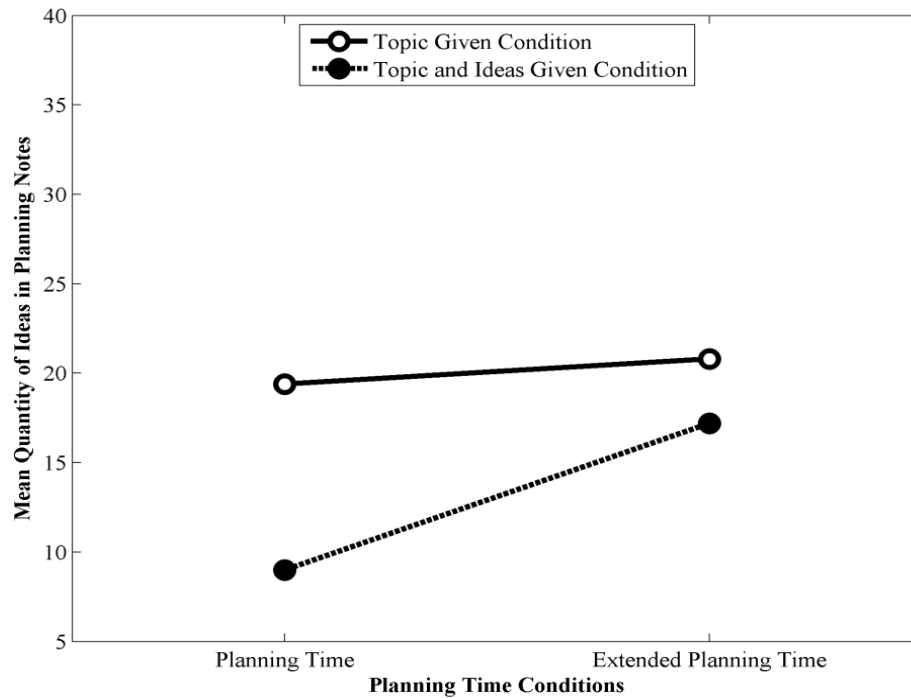


Figure 4.1: Mean quantity of ideas in the planning notes as a function of planning time and task conditions

In conclusion, the provision of additional ideas seems to have hindered the students in the production of their own ideas. Instead in terms of the quantity of ideas it appears to have been better for the students to generate their own ideas in their planning notes. We can conclude this because the topic given condition produced a significantly larger quantity of ideas overall than the topic and ideas given condition. In addition, students benefitted the most when they were given ample time to develop their own ideas: Students who were only given the topic and were also provided with an extended planning time of 20 minutes produced a significantly higher rate of ideas than all the other groups; i.e. the students who were given 20 minutes planning time plus additional ideas, and the two groups of students who were given 10 minutes planning time (irrespective of whether they had been given additional ideas or not).

4.2.5. Standard deviation and proficiency level for the quantity of ideas in the planning notes

The standard deviations for my statistical analyses are comparatively high. For the results presented in figure (1) the standard deviation is as presented in figure (4.2).

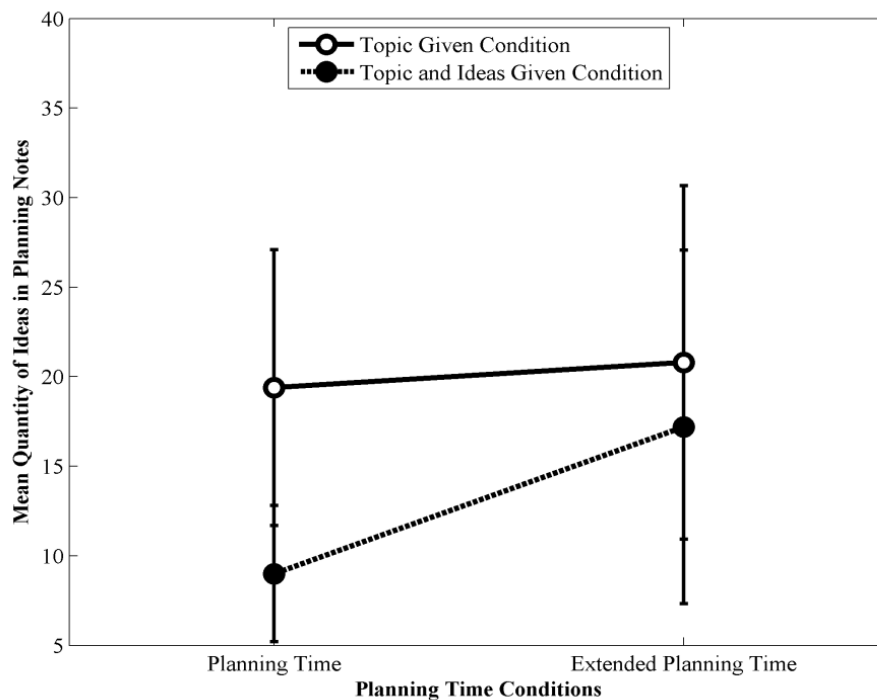


Figure 4.2: Standard deviation for the quantity of ideas in the planning notes

The scores plotted in figure (2) are: The standard deviation for the planning time condition in combination with the topic given condition is 7.70 and 3.81 for planning time condition in combination with the topic and ideas given condition (data points on the left side of the figure). The standard deviation for the extended planning time condition in combination with the topic given condition is 9.78. The standard deviation for the extended planning time condition in combination the ideas given condition is 9.78.

In order to account for this high degree of deviation from the mean I have tried to group the students participating in the study into three groups according to their proficiency levels as described in the methodology chapter (3.2.5.1. the experimental design process). However, the

students participating in the current study performed at a much lower proficiency rate than anticipated; their marks¹⁰ range from 29% to 62%. It was not possible to evenly distribute students who performed at the same proficiency levels across the groups as there is no even mark distribution across the groups. The majority of students (n=18) who participated in my study fall into a very poorly performing group who only achieve marks between 10%-30%, while seven students fall in a 'medium' group (40%-49%) and only five students receive marks above 50%. Thus, the students participating in the current study generally perform at a lower level than Ong's (2013) participants and the proficiency groups are less balanced than Ong's.

However the statistical tests that I conducted took into account the standard deviation and the results are still statistically significant. The analysis of variance (ANOVA) considers variance within sets in comparison to variance between sets. Therefore issues of the standard deviation are accounted for when looking for effects. The same line of reasoning applies to the subsequent analyses and graphs; hence the standard deviations will be presented in the appendices henceforth.

4.3. Effects of planning time and task conditions on the quality of ideas in the planning notes

For the current research it is important to assess not only the quantity but also the quality of the ideas generated under the two task and two planning conditions.¹¹ The first crucial question in this context is whether an extended planning time of 20 minutes as compared to 10 minutes will lead to the production a better quality of ideas in the planning notes. The second crucial question is whether participants generate a significantly better quality of ideas if they are given ideas of how to elaborate the topic (topics and ideas given condition) or whether the added ideas hamper the writers' creativity. Ong (2013, p.540) proposes that the addition of ideas to a topic leads to the generation of ideas with a poorer quality when compared to the topic given condition (i.e. the topic on its own without added ideas). Finally the third crucial question is whether we can detect any interactions between the task conditions and the planning time conditions: In other words do

¹⁰ These are the marks that were awarded to the students by the lecturer of the course not by the researcher.

¹¹ Please note that for the planning notes we only have two planning time conditions, i.e. 10 minutes planning time and 20 minutes planning time. Students who were allocated to the no planning time condition did obviously not produce any planning notes. Consequently I will discuss the influence of this third planning time condition for its influence on the idea generation in the essays only.

participants produce ideas of a higher quality if they are given both additional ideas and extra time? In the following sections I present the data with respect to the means obtained from the statistical analyses. As in the previous section of the analysis which concerned the quantity of ideas generated by my participants in their planning notes, here too, I will first discuss inter-scorer reliability.

4.3.1. Scores for the quality of ideas generated in the planning notes

The quality of ideas was assessed as described in the paragraph on rating schemes and coding in the methodology chapter (3.2.6.1. Rating schemes and coding). Three scorers independently scored the quality of the idea units generated by the participants according to the scoring schema provided by Ong (2013, p. 535). The quality of ideas was assessed in the planning notes. The individual scores per scorer are presented in table (4.3) below:

Planning time condition					
Topic given			Topic & ideas given		
Scorer 1	Scorer 2	Scorer 3	Scorer 1	Scorer 2	Scorer 3
4	4	4	4	5	5
3	3	3	3	3	3
3	3	3	3	3	4
3	4	4	5	5	5
4	4	4	5	5	6
Extended planning time condition					
Topic given			Topic & ideas given		
Scorer 1	Scorer 2	Scorer 3	Scorer 1	Scorer 2	Scorer 3
3	3	3	6	5	5
4	3	4	4	4	3
3	3	3	3	3	3
3	3	4	4	4	4
5	4	5	4	4	4

Table 4.3: Scores for the quality of ideas in the planning notes

Statistical analyses reveal an inter-scorer reliability of 81%. This means that the inter-scorer reliability in the current study for the quality of ideas scores is different from the inter-score reliability in Ong (2013, p. 535), which is 91%.

4.3.2. The quality of ideas in the planning notes: The effect of planning time conditions

Here I investigate whether the duration of the planning time affected the quality of ideas produced in the planning notes. This comparison was conducted using a Wilcoxon ranksum (Gibbons & Chakraborti, 2011; and Hollander & Wolfe, 1999). Overall there was no effect of planning time conditions on the quality of ideas in the planning notes ($p = 0.2558$). In other words, the additional time for the planning in the extended planning time condition (20 min) and the planning time condition (10 min) did not aid the students in producing better ideas.

4.3.3. The quality of ideas in the planning notes: The effect of the task conditions

Here I investigate whether students who were given additional ideas alongside their topic produced ideas that were of a higher quality than students who were only given the topic without further additions. The numerical scores for the effect of the task conditions were compared using a Wilcoxon ranksum (Hollander & Wolfe, 1999; and Gibbons & Chakraborti, 2011). The effect of task conditions on the quality of ideas in planning notes was significant ($p = 0.0101$). This means that those students who were given extra ideas in addition to their topic (topic and ideas given condition) produced a significantly better quality of ideas in their planning notes than students who were given only the topic (topic given condition).

4.3.4. The quality of ideas in the planning notes: The interaction between the planning time conditions and task conditions

Here I investigate the interaction between the planning time and the task conditions with regard to the quality of ideas produced in the planning notes. First I compare the two task conditions (topic given versus topic and ideas given) *within* the two planning time conditions as indicated in Table (4.4) below.

The mean scores in table 4 confirm my analysis in 4.3.2; namely that the amount of planning time had no influence on the quality of the ideas generated by the students in their planning notes. The quality of the ideas in the planning notes was found to be identical for the topic and ideas given condition across both planning time conditions; i.e. those students who were given an extended planning time of 20 minutes (extended planning time condition) produced ideas of the same overall quality than the students who were only given 10 minutes to write down their planning notes ($p = 0.446$). The same holds if we compare the interaction between the two planning time conditions with the topic given condition: Again there was no statistical difference in the quality of ideas regardless of whether or not the students were given 10 minutes or 20 minutes to write their planning notes ($p = 0.10$).

Variables	Planning time condition		Extended planning time condition	
	Topic given M(SD)	Topic and ideas given M(SD)	Topic given M(SD)	Topic and ideas given M(SD)
Planning notes: Quality of ideas	3.53 (0.52)	4.27 (1.03)	3.53 (0.74)	4 (0.85)

Table 4.4: Means and standard deviations of the scores for the quality of ideas for the task conditions within the planning time conditions in the planning notes

The results of the analysis of variance showed a main effect for task conditions; the topic and ideas given condition produced ideas of a significantly higher quality than the topic given condition. This interaction is plotted in figure 3 (based on the numerical values in table 4).

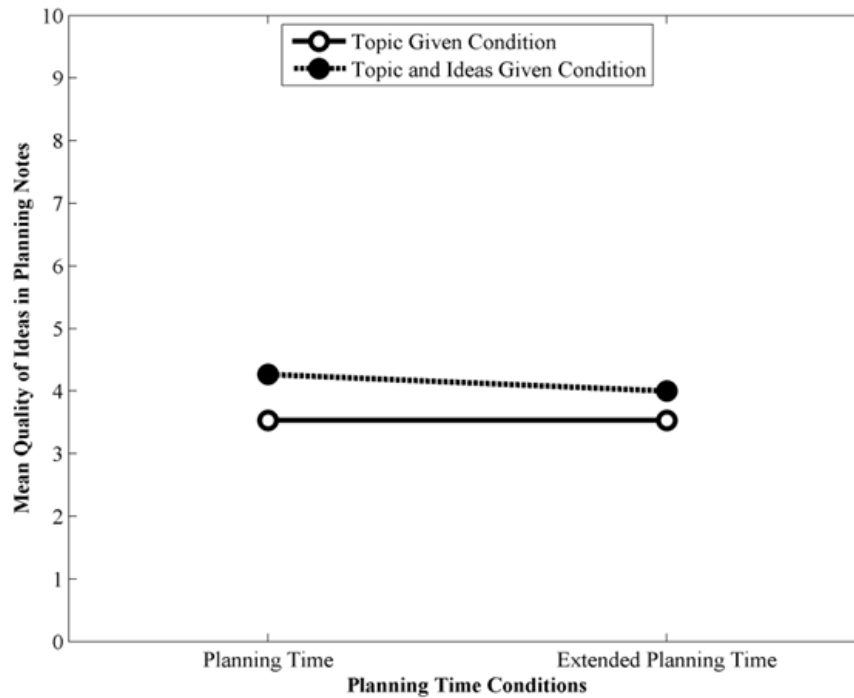


Figure 4.3: Mean quality of ideas in the planning notes as a function of planning time and task conditions

An independent t-test was conducted to compare the two task conditions *across* the two planning time conditions (planning time versus extended planning time and no planning time).

In the planning time condition (10 min), the students who were given the topic with ideas (topic and ideas given condition) produced a significantly higher mean rate of ideas ($M = 4.27$) than the students in the topic given condition ($M = 3.53$). This difference was found to be statistically significant, [$F(1, 280) = 6.05; p = 0.0203$].

Similarly, in the extended planning time condition (20 min), the students who were given the topic with ideas (topic and ideas given condition) produced significantly better quality ideas in their planning notes ($M = 4.0$) than the students who were only given the topic (topic given condition) ($M = 3.53$). This difference was found to be statistically significant [$F(1, 28) = 4.98; p = 0.030$].

In conclusion, students who were given the topic with ideas and were also provided with an extended planning time of 20 minutes produced a statistically significantly better quality of ideas than students who were given 20 minutes planning time with only the topic given. The same result was found for students who were given only 10 minutes of planning time; again those students who were provided with the topic and additional ideas produced a better quality of ideas than the students who were given only the topic.

Overall the analysis of the interaction of the task conditions confirmed that the planning time had no effect and it revealed moreover that with respect to the quality of the ideas produced in the planning notes, the only significant effect came from the topics and ideas given condition. There was a very obvious difference between the topic and ideas given and topic given conditions. Additional ideas lead to the production of higher quality ideas in the planning notes.

4.4. Effects of planning time and task conditions on the quantity of ideas in the essays

For the current research it is important to assess the quantity of the ideas generated under the two task and three planning conditions in the essays. The first crucial question in this context is whether a longer planning time will lead to the production to a greater number of ideas. The second crucial question in this context is whether participants generate significantly more ideas when they are given prompts on how to elaborate on the topic (topics and ideas given condition) or whether the added ideas hamper the writers' creativity. Ong (2013, p. 540) indicates that the addition of ideas to a topic by a teacher or experimenter leads to the generation of less ideas by the students when compared to the topic given condition (i.e. the topic on its own without added ideas). Finally the third crucial question in this context is whether we can detect any interactions between the task conditions and the planning time conditions: In other words do participants produce a maximal number of ideas if they are given extra ideas and extra time?

With regard to the essays I present the data with respect to the means obtained from the statistical analyses. Before I discuss the data concerning the scores obtained for the quantity of ideas under the various task and planning time conditions, I discuss inter-scorer reliability.

4.4.1. Scores for the quantity of ideas generated in the essays

The quantity of ideas in the essays was assessed as described in the paragraph devoted to the rating schemes and coding in the methodology chapter (3.2.6.1. Rating schemes and coding). Two scorers independently identified idea units as defined by Ong (2013, p.535) in the essays. The individual scores per scorer are presented in table (4.5) below:

Planning time condition			
Topic given		Topic & ideas	
Scorer 1	Scorer 2	Scorer 1	Scorer 2
35	35	21	21
18	18	15	15
16	16	8	8
32	32	16	16
17	17	22	22
Extended planning time condition			
Topic given		Topic & ideas	
Scorer 1	Scorer 2	Scorer 1	Scorer 2
17	18	38	18
11	11	19	28
13	13	14	14
15	15	21	21
17	17	22	22
No planning time condition			
Topic given		Topic & ideas	
Scorer 1	Scorer 2	Scorer 1	Scorer 2
31	31	13	13
21	21	21	21
19	19	17	17
26	28	21	21
23	23	27	25

Table 4.5: Scores for the quantity of ideas in the essays

The scores are almost identical across the two scorers. Statistical analyses reveal an inter-scorer reliability of 88%. This means that the inter-scorer reliability in the current study for the quantity of ideas scores is higher than the inter-scorer reliability in Ong (2013, p.535), which is 81%.

4.4.2. The quantity of ideas in the essays: The effect of planning time conditions

Here I investigate whether the amount of planning time affected the number of ideas produced in the essays. The essays were produced by the participants in accordance with the three planning time conditions: The first group of students started writing their essay after planning it for 10 minutes (planning time condition) hence they had 20 minutes to write the essay proper. The second students used 20 minutes to plan their essay and then spent ten minutes to write the essay proper (extended planning time condition). The third group of students started writing the essay without any previous planning and had the entire 30 minutes to write the essay proper (no planning time condition).

This comparison was conducted as a three-way, binary comparison using a Wilcoxon ranksum (Gibbons & Chakraborti, 2011; and Hollander & Wolfe, 1999). Overall there was no effect of the planning time conditions on the quantity of ideas in the essays.

The difference between the no planning time condition and the planning time condition was not found to be statistically significant ($p = 0.34250$). Similarly the difference between the planning time condition and the extended planning time condition was not found to be statistically significant ($p = 0.6492$) and the difference between the no planning time condition and the extended planning time condition ($p = 0.1102$) was not found to be statistically significant either. Therefore, the varying amounts of time that the students were allocated for the planning of their essays did not influence the number of ideas that they produced in their essays

4.4.3. The quantity of ideas in the essays: The effect of the task conditions

In this section I only look whether the additional ideas which were provided to half of the students (topic and ideas given condition) had an effect on the quantity of ideas that they produced in their essays. The numerical scores for the effect of the task conditions – topic given condition versus topic and ideas given condition – were compared via a Wilcoxon ranksum (Hollander & Wolfe, 1999; and Gibbons & Chakraborti, 2011). The statistical analysis revealed

that the task conditions had no effect on the quantity of ideas in essays as the difference between the average scores for these two conditions was not statistically significant ($p = 0.8514$).

4.4.4. The quantity of ideas in the essays: The interaction between the planning time conditions and task conditions

Here I investigate the interaction between the planning time and the task conditions on the quantity of ideas produced in the essays. First I compare the two task conditions (topic given versus topic and ideas given) *within* the planning time conditions as indicated in the table (4.6) below:

For students who spend 10 minutes planning their essay (planning time condition) the mean quantity of ideas produced under the topic given condition was roughly 24 ideas ($M = 23.60$; $SD = 9.13$) whereas they produced about 16 ideas if they were given the same planning time and additional ideas alongside the topic (topic and ideas given condition) ($M = 16.40$; $SD = 5.60$). This difference between the two task condition was not found to be statistically significant ($p = 0.17$).

In the extended planning time condition as well, there was no difference in the mean rate of ideas produced in the essays of the topic and ideas given condition ($M = 22.80$) and topic given condition ($M = 14.60$). This interaction between the two task conditions were found to be statistically not significant ($p = 0.087$) even though one would have expected a statistically significant difference between 23 and 15.¹² However, in his case for the extended planning time condition the standard deviation is extremely big for the topic and ideas given scores (9.04). This makes it impossible to reach a statistically significant difference here.

Similarly in the no planning time condition, there was no difference in the mean rate of ideas produced in the essays of the topic given ($M = 24.40$) and the topic and ideas given condition ($M = 19.40$). This interaction between the two task conditions was not statistically significant ($p = 0.1364$).

¹² In figure 4 the distance between the data points for the topic given and topic and ideas given conditions in the extended planning time condition is large (in the middle of the graph) but because of the huge standard deviation this difference is not statistically significant.

Variables	Planning time condition		Extended planning time condition		No planning time Condition	
	Topic given M(SD)	Topic and ideas given M(SD)	Topic given M(SD)	Topic and ideas given M(SD)	Topic given M(SD)	Topic and ideas given M(SD)
Quantity of ideas in the essays	23.60 (9.13)	16.40 (5.60)	14.60(2.61)	22.80 (9.04)	23.60 (9.13)	16.40 (5.60)

Table 4.6: Means and standard deviations of the scores for the quantity of ideas for the task conditions within the planning time conditions in the essays

An independent t-test was conducted to compare the two tasks conditions *across* the three planning time conditions (planning time versus extended planning time and no planning time). Figure (4.4) below plots the interaction between the three planning time conditions (planning time versus extended planning time and no planning time) and the two task conditions (topic given, topic and ideas given).

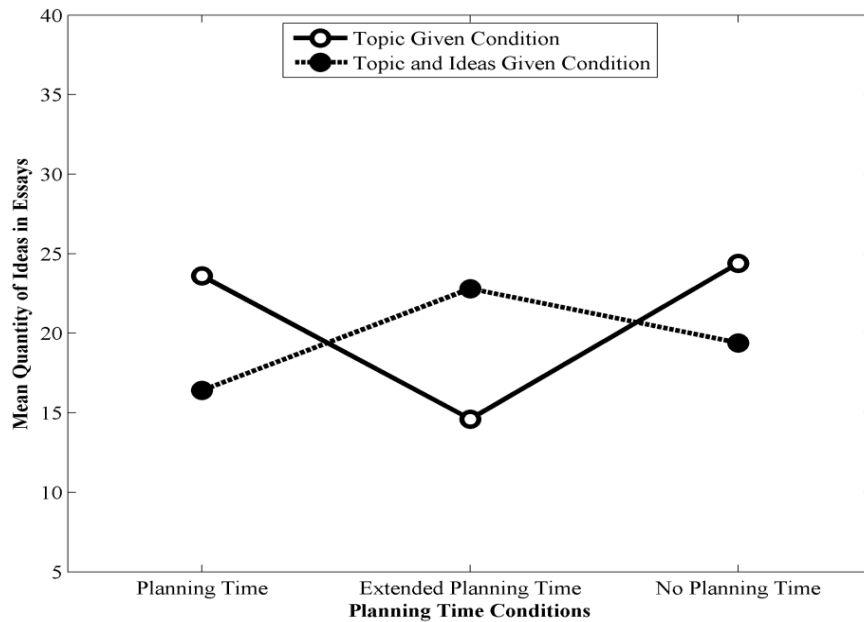


Figure 4.4: Mean quantity of ideas in the essays as a function of planning time and task conditions

Considering the results to examine the interaction of the planning time and task conditions, there were no statistically significant differences in any cases except for the no planning time condition as compared to the extended planning time condition, for the case of only the topic given ($p = 0.0046$). For the case of only the topic given in particular, the no planning time condition versus the planning time condition yielded no difference ($p = 0.8677$), as did the planning time condition compared to the extended planning time condition ($p = 0.0668$). This second result may be unexpected, given that the planning time condition yielded a higher score for the quantity of ideas in the essays ($M = 23.60$) as compared to the extended planning time condition (14.60). However, the standard deviation for the planning time condition was large ($SD = 9.13$), and so any variance in this relationship is not apparent.

For the case of the topic and ideas given, the no planning time condition versus the planning time condition yielded no statistically significant difference ($p = 0.380$). Similarly, there was no difference between the no planning time condition and the extended planning time condition ($p = 0.474$). There was also no difference between the planning time condition and the extended

planning time condition ($p = 0.215$). Therefore, for the situation in which the topic and ideas were given, planning time duration had no detectable effect.

In conclusion, there are few detectable differences between the scores for the quantity of ideas in the essays for the different planning time and task conditions. However, the case in which there was no planning time and only the topic was given yielded the highest score for the quantity of ideas in the essays. The interactions can be summarized in figure (4.5) below. The darkness of a particular region in the figure corresponds directly with the score for the quantity of ideas in the essays under the given task and planning time conditions (i.e. darker hues equate to a higher score).

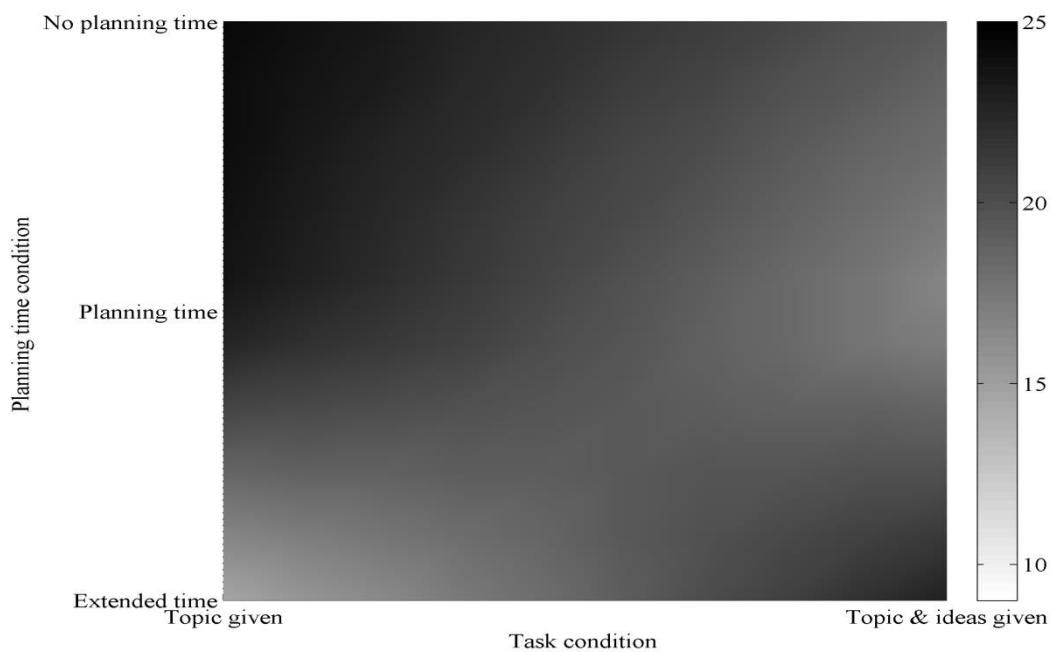


Figure 4.5: Visualization of the interactions between the planning time condition and the task condition on the mean quantity of ideas in the essays

The visualization in figure 5 clearly shows how _scattered the results for the quantity of ideas in the essays are overall as there are predominantly grey areas and hardly any areas that indicate a stark contrast between black and white. This reflects the fact that the detection of statistically significant differences between the different planning time conditions and task conditions is confounded by the large variance for two of the situations considered (the planning time

condition for the case of only the topic given, and the extended planning time condition for case of the topic and ideas given).

4.5. Effects of planning time and task conditions on the quality of ideas in the essays

In this study, it is of course also important to assess the quality of the ideas generated under the two task and three planning conditions in the essays. The first crucial question in this context is whether any of the three planning condition (planning time condition (10 min), extended planning time condition (20 min) as compared to no planning time) will lead to the production a better quality of ideas. The second crucial question in the current context is whether participants generate a significantly better quality of ideas if they are provided with ideas of how to elaborate the topic (topics and ideas given condition) or whether the added ideas hamper the writers' creativity. Finally the third crucial question in this context is whether we can detect any interactions between the task conditions and the planning time conditions: In other words do participants produce ideas of a higher quality if they are given both additional ideas and extra time?

As mentioned before, I present the data with respect to the means obtained from the statistical analyses. As in the previous section of the analysis which was concerned with the quantity of ideas generated by my participants, here, too, I will first discuss inter-scorer reliability.

4.5.1. Scores for the quality of ideas generated in the essays

The quality of ideas was assessed as described in the paragraph on rating schemes and coding in the methodology chapter (3.2.6.1. Rating schemes and coding). Three scorers independently scored the quality of the idea units generated by the participants according to the scoring schema provided by Ong (2013, p. 535). The individual scores per scorer are presented in table (4.7) below:

Planning time condition					
Topic given			Topic & ideas given		
Scorer 1	Scorer 2	Scorer 3	Scorer 1	Scorer 2	Scorer 3
3	3	2	2	2	3
4	4	4	3	2	2
2	1	1	3	3	2
4	4	4	5	5	6
3	3	3	2	2	2
Extended planning time condition					
Topic given			Topic & ideas given		
Scorer 1	Scorer 2	Scorer 3	Scorer 1	Scorer 2	Scorer 3
4	4	4	4	4	3
4	3	2	2	2	3
4	3	2	3	3	3
7	7	7	4	5	6
6	6	6	4	4	2
No planning time condition					
Topic given			Topic & ideas given		
Scorer 1	Scorer 2	Scorer 3	Scorer 1	Scorer 2	Scorer 3
4	5	4	4	4	4
4	4	4	3	2	2
4	4	4	4	4	4
3	3	2	4	4	5
4	4	5	2	2	2

Table 4.7: Scores for the quality of ideas in the essays

The scores are basically identical between the three scorers. Statistical analyses reveal an inter-scorer reliability of 87%. This means that the inter-scorer reliability in the current study for the quality of ideas scores is higher than the inter-scorer reliability in Ong (2013, p.535), which is 82%.

4.5.2. The quality of ideas in the essays: The effect of planning time conditions

Here I investigate whether the duration of planning time affected the quality of ideas produced in the essays. I conducted three-way, binary comparisons using a Wilcoxon ranksum (Gibbons &

Chakraborti, 2011; and Hollander & Wolfe, 1999). In sum the main effect of the planning time on the quality of ideas produced in the essays was statistically significant. In detail the results are as follows:

In this case, there was a statistically significant difference between the planning time condition and the extended planning time condition in terms of the quality of ideas for the essays ($p = 0.0075$). Here, the extended planning time condition produced higher scores for the quality of ideas in the essays ($M = 4.0$) than the planning time condition.

The comparison of the no planning time condition with the planning time condition revealed that the no planning time condition resulted in a higher quality of ideas ($M = 3.6$) as compared to the planning time condition ($M = 3.0$); this difference was statistically significant ($p = 0.00129$).

In contrast there was no statistically significant difference between the extended planning time condition and the no planning time condition with respect to the quality of the ideas produced in the essays ($p = 0.6396$). This means that, the students who were given an extended time to plan before writing their essays produced a higher quality of ideas in their essays than the students who were only given 10 minutes to plan. Interestingly, however, there was no statistical difference between the extended planning time condition and the no planning time condition. Giving the students only 10 minutes of planning time produced the lowest quality of ideas in their essays.

4.5.3. The quality of ideas in the essays: The effect of the task conditions

Here I investigate whether students who were given additional ideas alongside their topic produced ideas that were of a higher quality than students who were only given the topic without further amendments. The numerical scores for the effect of the task conditions were compared using a Wilcoxon ranksum (Hollander & Wolfe, 1999; and Gibbons & Chakraborti, 2011). The average score for the topic given condition is 3.8 whereas the average for topic and ideas given condition is 3.2. The difference between these scores and hence the effect of the task conditions on the quality of ideas in essays was statistically significant ($p = 0.0320$). In other words when the students were given a topic without any additional ideas, they produced a significantly higher quality of ideas in their essays.

4.5.4. The quality of ideas in the essays: The interaction between the planning time conditions and task conditions

Here I investigate the interaction between the planning time and the task conditions on the quality of ideas produced in the essays. The results are as in the table (8) below where I compare the two task conditions (topic given versus topic and ideas given) *within* each of the planning time conditions.

For the planning time condition I found that the students who were given 10 minutes to plan their essay and then wrote for 20 minutes (planning time condition) produced ideas with an average quality score of 3 if they were given the topic only (topic given condition) ($M = 3$; $SD = 1.08$) whereas the students who were given the topic and additional ideas produced ideas with an average quality score of 2.93 ($M = 2.93$; $SD = 1.33$). The interaction between the two task conditions for the planning time condition was found to be statistically non-significant [$F(1, 28) = 0.022$; $p = 0.881$]; hence the quality of ideas produced is similar.

In contrast, in the extended planning time condition students who were given only the topic (topic given condition) produced ideas of a superior quality ($M = 4.60$; $SD = 1.76$) than students who were given the topic with additional ideas (topic and ideas given condition) ($M = 3.47$, $SD = 1.13$). Hence extended planning time condition yielded a statistically significant difference for the two task conditions [$F(1, 28) = 9.02$; $p = 0.0056$].

In the no planning time condition the topic given condition yielded an average quality score of almost 4 ($M = 3.93$, $SD = 0.80$) whereas the quality score for the ideas which were produced in the topic with ideas given condition was lower ($M = 3.33$, $SD = 1.05$). The interaction between the two task conditions for the no planning time condition was found to be statistically non-significant [$F(1, 28) = 3.11$; $p = 0.088$].

Variables	Planning time condition		Extended planning time condition		No planning time Condition	
	Topic given M(SD)	Topic and ideas given M(SD)	Topic given M(SD)	Topic and ideas given M(SD)	Topic given M(SD)	Topic and ideas given M(SD)
Essays: Quality of ideas	3.00 (1.08)	2.93 (1.33)	4.60 (1.76)	3.47 (1.13)	3.93 (0.80)	3.33 (1.05)

Table 4.8: Means and standard deviations of the scores for the quality of ideas for the task conditions within the planning time conditions in the essays

Figure (7) as shown plots the comparison of the two task conditions (topic given and topic versus ideas given) *across* the three planning time conditions (planning time versus extended planning time and no planning time). The results of the analysis of variance showed a main effect for the task conditions; the topic given condition consistently produced ideas of a statistically significantly higher quality than the topic with ideas given condition. The topic with ideas given condition had in fact no significant effect on the quality of the ideas produced.

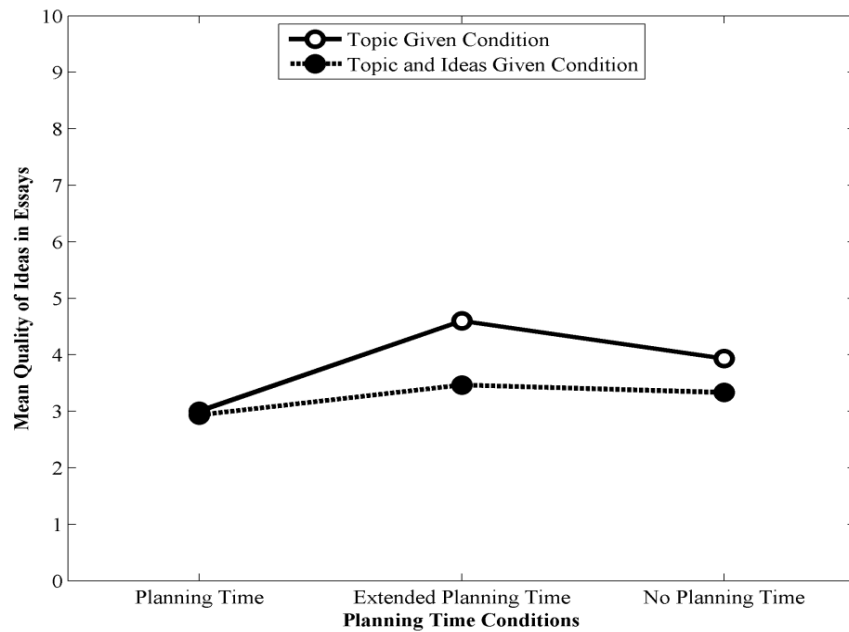


Figure 4.6: Mean quality of ideas in the essays as a function of planning time and task conditions

For the case of the topic only given, the scores for the quality of ideas in the planning time condition were different from the no planning time condition ($p = 0.011$), and there was also a statistically significant difference between the planning time condition and the extended planning time condition ($p = 0.0056$). There was no statistically significant difference between the no planning time condition and the extended planning time condition ($p = 0.193$). It was found that the planning time condition produced the lowest scores for the quality of ideas in the essays ($M = 3.00$) as compared to either the no planning time condition ($M = 3.93$) or the extended planning time condition ($M = 4.60$), which were similar to one another.

In the case of the topic and ideas given, the scores for the quality of ideas in the essays were broadly similar. The no planning time condition was not different to the planning time condition ($p = 0.369$), or the extended planning time condition ($p = 0.739$). There was also no statistically significant difference between the planning time condition and the extended planning time condition ($p = 0.247$).

In conclusion, if the students were given the topic and ideas, then the amount of planning time made no detectable difference to the quality of ideas in the essays. However, for the case in which the students were given the topic only, the planning time condition produced the lowest mean quality of ideas in the essays. While the extended planning time condition ($M = 4.60$) may appear to result in the highest scores for the quality of ideas in the essays, there was no statistically significant difference compared to the no planning time condition ($M = 3.93$). Therefore, giving the students the topic only and either no planning time or extended planning time produced the highest mean scores for the quality of ideas in the essays.

4.3. Discussion

The aim of this study is to investigate the effects of three planning time conditions (planning time, extended planning time, and no planning time) and two task conditions (topic given and topic and ideas given) on the quality and quantity of ideas produced in the planning notes and essays of 30 ESL learners. In particular, this study set out to test four hypotheses which were suggested in a previous study conducted by Ong (2013, p.533).

The first hypothesis says that the extended planning time condition produces both a larger quantity and a better quality of ideas in the planning notes than the planning time condition.

The second hypothesis says that the no planning time condition produces both a better quality and a larger quantity of ideas in the essays than the planning time and the extended planning time conditions.

The third hypothesis states that the topic and ideas given condition produces both a better quality and a larger quantity of ideas in the planning notes than the topic given condition.

The fourth hypothesis states that the topic and ideas given condition produces both a better quality and a larger quantity of ideas in the essays than the topic given condition.

The hypotheses are reflected in my research questions, which are the repeated here:
How is the idea generation process affected by various planning time and task conditions?

Sub-questions:

- a) Which of the three planning time conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?
- b) Which of the two task conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?
- c) What effect does the interaction between planning time conditions and task conditions have on the quantity and quality of ideas produced in the planning notes and essays?

In the following I discuss the answers to each of these questions with respect the planning notes and subsequently with respect to the essays.

4.3.1. Discussion of the results for idea generation in the planning notes

Here I discuss my results for the idea generation in the planning notes with respect to my research questions and the four hypotheses presented in Ong (2013).

Idea generation in the planning notes; sub-question (a)

- a) Which of the three planning time conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?

The findings of this study do not support hypothesis (1), namely that the extended planning time would aid the students to produce a larger quantity of ideas and would simultaneously lead to the production of a superior quality of ideas in the planning notes. Instead, neither the quantity nor the quality of ideas in the planning notes was affected by the planning time conditions (planning time and extended planning time conditions) alone. In other words neither the quantity nor the quantity of the planning notes was affected by the time that was spent on them.

Idea generation in the planning notes; sub-question (b)

- b) Which of the two task conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?

In terms of sub-question (b), it was found that the addition of ideas to the topic did not aid the students in producing a greater amount of ideas in their planning notes; rather students who were given additional ideas produced less idea than the students who were only given the topic.

However, the addition of ideas alongside the topic did have an impact on the *quality* of ideas that were produced in the planning notes: Those students who were given extra ideas in addition to their topic (topic and ideas given condition) produced significantly better quality ideas in their planning notes than students who were given only the topic (topic given condition). Hence, my results partially support the third hypothesis, which states that the topic and ideas given condition will produce both a better quality and a larger quantity of ideas in the planning notes than the topic given condition.

Idea generation in the planning notes; sub-question (c)

- c) What effect does the interaction between planning time conditions and task conditions have on the quantity and quality of ideas produced in the planning notes and essays?

In terms of the interaction between the planning time conditions and the task conditions I found that the best combination with respect to the *quantity* of ideas produced was the combination of the extended planning time condition with the topic given condition. This result seems to partially support hypothesis (1) which says that an extended planning time will benefit the production of idea units. However, this effect was not found with respect to the *quality* of ideas produced in the planning notes. Here the only significant effect came from the topics and ideas given condition. There was a very obvious difference between the topic and ideas given condition and the topic given condition: Additional ideas systematically lead to the production of a higher quality of ideas in the planning notes irrespective of which planning time condition the topic and ideas given condition was combined with.

The combination of the extended planning time condition with the topic given condition produced a larger *quantity* of ideas in the planning notes; this outcome might be explained by the extra planning time allocated to the learners as this extra time might have reduced the cognitive demands during the planning process. This in turn might have aided them to generate their own

ideas and would have had a positive impact on the generation of original ideas in the planning notes. Ong (2013) hypothesises that an additional amount of planning time perhaps assists the activation and retrieval of idea units from the learners' long-term memory (Ong, 2013). According to Ong (2013), Galbraith (1999, 2009) and Kellogg (1996), such activated and retrieved idea units may be pre-arranged as short linguistic strings and then executed as the transcribed ideas. The finding that the addition of ideas to the topic did not lead to an even larger quantity of ideas in the planning notes may support this hypothesis as the provision of additional ideas by the experimenter would force the writer to cross-compare between her/his own, stored idea units and those ideas which are provided for her/him by the experimenter. The comparison between the two sets of ideas may lead to an added cognitive processing load.

The idea that added cognitive demands lead to a decrease in the overall number of ideas produced receives support for a previous study conducted by Galbraith et al. (2005). According to Ong (2013, p. 538) the study conducted by Galbraith et al. (2005) found that even ~~a~~ random number generation secondary task that was designed to load on the central executive component of the working memory while participants composed their essays had significantly reduced the number of ideas produced and the number of words per idea in the planning notes [...]"'. However, with respect to the quality of the idea units the added cognitive demand on the students which emanated from having to compare stored idea units with ideas that were given to them may have led to more profound thinking processes and may have ultimately sparked the emergence of new idea units which were of a higher quality than the idea units which were readily available to the students as stored units in their memory.

I will now discuss my findings regarding the idea generation in the essays according to my research sub-questions.

4.3.2. Discussion of the results for idea generation in the essays

Here I discuss my results for the idea generation in the essays with respect to my research questions and the four hypotheses presented in Ong (2013).

Idea generation in the essays; sub-question (a)

- a) Which of the three planning time conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?

Overall it was found that the varying amounts of time that the students were allocated for the planning of their essays did not influence the *quantity* of ideas that they produced in their essays. This finding falsifies the second hypothesis (hypothesis 2) which stipulates that the ‘no planning time’ condition will produce both a better quality and a larger quantity of ideas in the essays than the planning time and the extended planning time conditions. Hypothesis (2) was also falsified with respect to the *quality* of the ideas produced in the essays as both the extended planning time and the no planning time conditions yielded ideas of a similar overall quality. The outlier was the planning time condition: Students who were given 10 minutes to plan produced the lowest quality of ideas.

Idea generation in the essays; sub-question (b)

- b) Which of the two task conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?

Statistical analyses revealed that the task conditions on their own had no effect on the *quantity* of ideas in essays as the difference between the average scores for these two conditions was not statistically significant. However, with respect to the *quality* of the ideas produced in the essays, I found a significant effect of the task conditions: The topic given condition led to a significantly better quality of ideas than the topic and ideas given condition. Hence my findings do not support hypothesis (4) which states that the topic and ideas given condition will produce both a better quality and a larger quantity of ideas in the essays.

Idea generation in the essays; sub-question (c)

- c) What effect does the interaction between planning time conditions and task conditions have on the quantity and quality of ideas produced in the planning notes and essays?

There are few detectable differences between the scores for the *quantity* of ideas in the essays for the different planning time and task conditions. This was mainly due to the substantial standard deviation in this data set. There was a detectable trend, though, which indicated that in a bigger and/or more homogenous data set the combination between the no planning time condition and the topic given condition might yield the best results.

While the extended planning time condition in combination with the topic given condition may have appeared to result in the highest scores for the *quality* of ideas in the essays, there was no statistically significant difference compared to the combination of the topic given and the no planning time condition. Therefore, giving the students the topic only and either no planning time or an extended planning time produced the highest mean scores for the quality of ideas in the essays.

While applying some caution, the results of this study seem to lend some favourable support for Galbraith's (1999) knowledge constituting model and Ong's (2013) study.

Firstly, the findings of my study appear to support Galbraith's (1999) proposition that ideas are best discovered when writers are given a topic and generate content without planning. This idea is supported by the observation of a trend indicating that a larger number of ideas may be produced in essays when the participants were given the topic only and no extra planning time.

Secondly, it is also plausible that the outburst of ideas in the essays under the topic given/no planning time condition that was clearly detectable in the essays of some of the students might have been the outcome of the fact that the writers were able to use the entire 30 minutes time slot for the writing of their actual essay. It should be noted, however, that this interpretation of the results rests on an assumption that in the no planning time condition/topic given condition the participants followed the instruction given to them; i.e. to write immediately and constantly and not to plan their writing. The reasoning behind this finding is that the no planning time condition/topic given condition most likely activated idea units and aided the learners in the retrieval of these idea units from their long-term memory. This might have contributed to a larger production of ideas in this condition as compared to the planning time/topic given condition and extended planning time/topic given condition. Ong (2013) hypothesises that the students might

also have perceived a certain ‘time pressure’ as they had to start writing the essay immediately which in turn may have accelerated the ‘activation of ideas boost’ even further.

Overall the interpretation of the ‘activation of ideas boost’ as explained in the previous paragraph entails that the students who wrote their essays under the no planning time/topic given condition engaged in little on-line planning (planning takes place during the performance of a task, and the participants were not restricted in the amount of time) and hence predominantly devoted their resources to the transcription (translating) process rather than the planning process (Ong, 2013; Ong and Zhang, 2013). Ong (2013) hypothesises that such a condition may reduce the cognitive demands of the writing process, since the participants were instructed to focus on one task only; a suggestion that is also supported in Ong (2013 and 2010) as well as in Ong and Zhang (2013). However, Ong emphasises that the interpretation of the results with regards to the outburst of ideas in no planning time conditions has to be viewed with caution and future research is required to confirm the effects of the transcription (translating) process on the quantity of ideas (Ong, 2013, p. 539).

In contrast, some previous studies such as Kellogg (1988, 1990) and Ellis and Yuan (2004) highlight the beneficial effects of the planning time condition compared to the no planning time condition in relations of fluency production (Ong 2013, p.539). The authors suggest that the cognitive load of the writing task is actually reduced through pre-task planning. The open question in this context is of course what exactly happens during the transcription process. In other words, do learners really shift from planning to writing, or, do they continue to plan during transcription (Ong, 2013, p. 539)? If learners continue to plan during transcription, it is probable that the planning time condition does not reduce the cognitive load of the writing task. However, if learners change from planning to writing, it is possible that the planning time condition reduces the cognitive load of the writing task (Ong, 2013, p.539). This question requires further research and lies outside the scope of my study.

4.3.3. Summary of my results

Ong (2013) proposes four hypotheses which led my research. These are:

Hypothesis (1): The *_extended planning time* condition produces both a larger quantity and a better quality of ideas in the planning notes than the *_planning time* condition.

Hypothesis (2): The *_no planning time* condition produces both a better quality and a larger quantity of ideas in the essays than the *_planning time* and the *_extended planning time* conditions.

Hypothesis (3): The *topic and ideas given* condition produces both a better quality and a larger quantity of ideas in the planning notes than the *_topic given* condition.

Hypothesis (4): The *_topic and ideas given* condition will produce both a better quality and a quantity of ideas in the essays.

On the basis of my data I have to conclude that these hypotheses were not optimally formulated. First, they stipulate that both the planning time conditions and the task conditions would have an isolated effect on the idea generation process. Secondly they stipulate that these effects would be identical for the idea generation process in the planning notes and the idea generation process in the essays; i.e. that idea generation in these two phases of the composition process would be based on the same cognitive processes. Both of these assumptions do not seem to hold for my data.

First, the planning time conditions had no effect on their own, which would mean that my data falsify hypotheses (1) and (2) as stated. Planning time was however a variable *in combination* with the task conditions. Second, my data indicates that the idea generation process in the planning notes was different to the idea generation process in the essays.

The following four figures illustrate how the planning time conditions and task conditions interacted during the idea generation process for the planning notes as compared to the essays. In each of the figures scores for the quantity and the quality of ideas are depicted as black pixels.

This means the darker an area in the figure is the more ideas were produced under the conditions that are represented by this area of the graph. Figure (7) depicts the *quantity* of ideas generated in the planning notes while figure (8) illustrates the quantity of ideas generated in the essays.

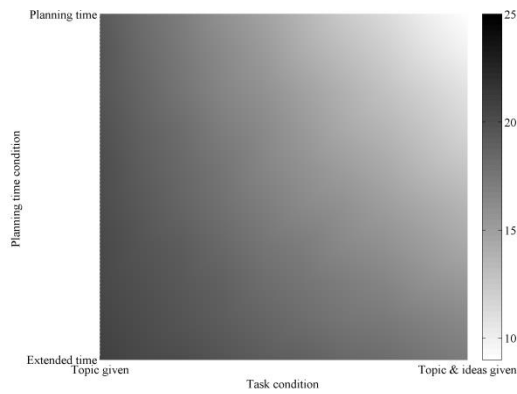


Figure 4.7: *Quantity of ideas/planning notes*

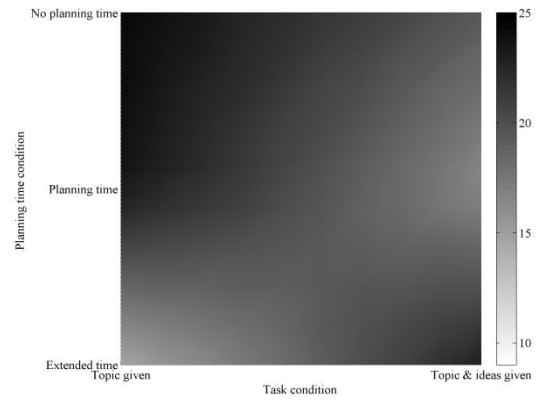


Figure 4.8: *Quantity of ideas/essays*

A comparison of the two figures shows that for the quantity of ideas generated in the planning notes a combination of topic given with the extended planning time condition was the most successful; whereas for the essays a combination of no planning time and topic given yielded very few detectable differences between the scores for the *quantity* of ideas in the essays for the different planning time and task conditions. Hence, the idea generation process was influenced by very different variables in the planning notes as compared to the essays.

A similar observation holds for the quality of the ideas that were generated in the planning notes and in the essays. Figure (9) depicts the *quality* of ideas generated in the planning notes while figure (10) illustrates the quality of ideas generated in the essays.

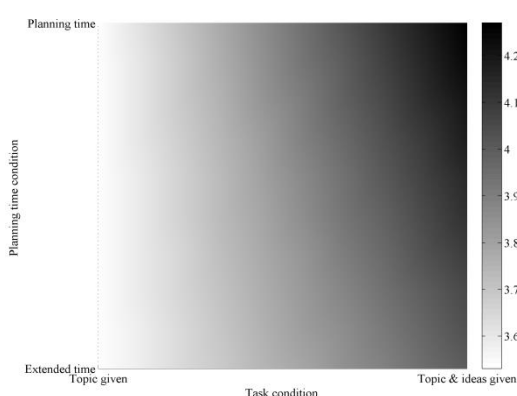


Figure 4.9: *Quality of ideas/planning notes*

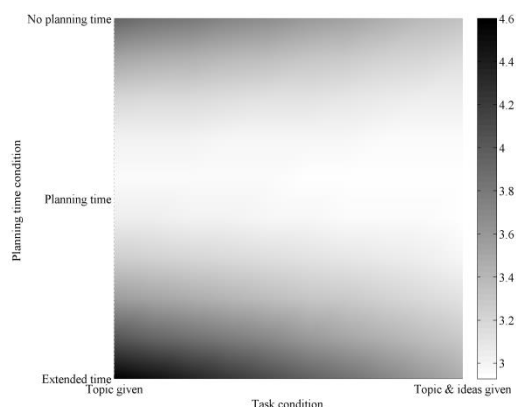


Figure 4.10: *Quality of ideas/essays*

The graphs clearly illustrate that the generation of quality ideas in the planning notes was supported by different factors than the generation of quality ideas in the essays. For both the planning notes and the essays the planning time conditions had only a small impact on the generation of high quality ideas. However the two task conditions had opposite effects on the planning notes and the essays: For the planning notes a combination of the topics and ideas given condition with any of the planning conditions led to the generation of high quality ideas whereas for the essays a combination of the topic given condition with either the no planning or the extended planning condition yielded the best results.

As the role of the planning process hence has to be considered in relation to the transcription process, the following important question was raised by Ong, ~~are~~ *are* beneficial effects of planning during the planning stage sustained in the writing stage?” (Ong, 2013, p. 539).

This question is difficult to answer on the basis of my findings as useful effects of planning time were only apparent in a very limited sense (compare fig 8, 9, 10 and 11). Overall there were no immediate effects of the different planning time conditions on idea generation process and this observation holds for both the planning notes and the essays. Planning time only played a role in certain interactions between the planning time conditions and the task conditions:

For the *quantity* of the ideas generated in the planning notes a combination of topic given with the extended planning time condition was the most successful. This effect did not carry over to

the essays as there are very few detectable differences between the scores for the quantity of ideas in the essays overall. For the *quality* of the ideas generated in the planning notes a combination of the topics and ideas given condition with any of the planning conditions led to the generation of high quality ideas. Again this effect did not carry over to the essays, where a combination of the topic given condition with either the no planning or the extended planning condition yielded the best results.

Ong (2013) discusses three reasons which might – at least partially – explain such results: Firstly, learners who were given the topic only and an extended planning time produced the highest quantity of ideas in their planning notes but this effect did not carry over to their essays where I could find hardly any differences with respect to the quantity of ideas across the different planning time and task conditions. Ong (2013, p. 540) hypothesises that the lack of a ‘carry-over-effect’ might in this case be caused by the very short writing time: Students who were given an extended planning time of 20 minutes might have had an inadequate amount of time to transcribe their ideas in the essay proper because they had a very limited writing time of only 10 minutes. This may have offset a possible advantage gained from the extended planning time.

Secondly, Ong (2013, p. 540) asserts that in her study “good plans failed to be translated to good essays, owing to a transitional conflict between these two processes: planning and transcribing.” The current study concurs with Ong (2013). In the planning notes a combination of the topics and ideas given condition with any of the planning conditions led to the generation of high quality ideas. However in the essays the best ideas were produced by a different set of students; namely those who were given the topic only in combination with either no planning time or an extended planning time. I hypothesize that the students who generated their own ideas experienced less cognitive load in the actual writing process because they did not have to integrate three different sets of ideas during the writing process; i.e. ideas that they had retrieved from their own memory, ideas that they had been given by the experimenter and ideas that they had generated themselves while planning or writing.

The integration of various sets of ideas during the writing process might be further hindered by an inability to shift from the planning process to the transcription (translating) process. If the

learners continued to engage in on-line planning, they might have experienced an even higher cognitive load (Ong, 2013, 2010 and Ong and Zhang's 2013). This aspect might have had some impact in my investigation because most of my participants were very inexperienced writers and it is plausible to assume that they would have battled with the transition from planning to writing.

Hence a third reason for the lack of positive 'carry-over-effects' between the planning phase and the writing phase in my investigation could be that the learners may have had very good ideas but they lacked the linguistic proficiency to transcribe these ideas into coherent text. Since the participants in this study had very low proficiency levels in English overall, this might have been a prevalent problem for them. Ong also points out this problem for some of her participants (Ong, 2013, p. 540). Participants in the topics and ideas given/extended planning time condition had 20 minutes planning time during which they generated high quality ideas for their essays; however, when they started to write their essays the lack of language proficiency and overall writing skills may have negatively impacted on the execution of their essays. This disadvantageous situation might have been further aggravated by the very limited time they were given to write the essay proper (10 minutes). In this respect planning notes may enable teachers and researcher to access high quality ideas that their students or participants are in principle able to generate. This would aid in particular such students or participants who battle with transcribing their ideas into coherent text and who may 'lose' the quality of their ideas during the writing process due to the various cognitive demands that are posed on them.

So what role does planning play for the actual writing process? My results seem to concur with Kellogg (1990) who argues that a no planning condition improves writing quality, fluency, and lexical complexity compared to all other conditions. Ong (2013) found in her study that the no planning condition produces extensively more ideas in essays compared to the diverse planning time conditions. On the basis of such results Ong (2013) cautions, it is possible that the impact of planning has been exaggerated in earlier studies, and she asserts that planning time benefits planning, but not writing, for ESL learners.

In conclusion, I suggest to use planning time conditions to elicit idea units from ESL learners which might otherwise remain undetected, such a strategy may aid teachers to understand their learners better as it enables the learners to share ideas with the teacher that would otherwise be literally ‘lost in translation’. The worth of the planning process for the actual writing process seems to be rather limited. This seems to hold in particular if ESL learners have very low language proficiency and underdeveloped writing skills in the L2 as the majority of my participants.

4.3.4. Further discussion of the results for idea generation in the planning notes and essays

Overall the findings of my study lend some support to Galbraith’s (1999) proposition that the transcription (translating) process is a more critical process than the planning process for the generation of ideas. This statement is mainly supported by the finding that the planning time conditions on their own only had an impact on the quality of the ideas generated in the essays; the quantity and quality of ideas generated in the planning notes and the quantity of ideas generated in the essays were unaffected.

Moreover, I found a higher mean rate of ideas produced during the writing stage when compared to the planning stage (Ong, 2013). This may indicate that the speed in which idea units were activated and retrieved from the writers’ long-term memory is faster during the transcription process (the actual writing) than during the planning process since the transcription process is hypothesised to place less cognitive demands on the writers than the planning process (Kellogg, 1996; Ong, 2013). These factors need to be further investigated while taking into consideration that the number of ideas produced and the quality of ideas produced are also parameters which need to be taken into consideration. As Ong (2013, p. 539) points out:

The production of more ideas does not compete for a similar pool of working memory resource as the production of good ideas. Producing more ideas may make less cognitive demands on the participants, whereas producing good ideas which are viewed in terms of the persuasiveness of ideas, development of ideas, weaving of ideas together in writers’ thesis, and refutations of counter-arguments of writers’ ideas, may make more cognitive demands on the learners.

Another conceivable explanation for the above finding, i.e. that I found an overall higher mean rate of ideas produced during the writing stage when compared to the planning stage, could be that the writers' rhetorical goals for planning and writing might have impacted on the quantity of ideas produced across the stages of the composing process (Galbraith, 1992, 1999; Galbraith et al., 2005; Ong, 2013). The rhetorical goals of the writers during planning and transcription influence the generation of ideas (Ong, 2013; Kellogg, 1996; Galbraith, 1992, 1999; Galbraith et al., 2005). As in the case of Galbraith's (1992, 1999) studies, for instance, the rhetorical goals of the writers were found to influence the production of ideas in the essays differentially for the planning and synthetic planning conditions (Ong, 2013).

Kellogg (1990) states that in his investigation it was the topic given condition, and not the topic and ideas given condition that produced a better quality content in the planning time condition. It is probable that the task prompt provided in this study has been a sufficient condition for the activation of ideas from the learners' long-term memory. Ong (2013, p. 540) indicates for her study that "[...] further assistance in the form of given ideas provided for the learners was not illuminating. Equally reasonable is that the learners were not able to associate the given ideas with the idea units in their long-term memory, that is, the given ideas failed to activate more idea units, and consequently, the learners failed to retrieve them." In addition, Ong and Zhang's (2010) findings indicate that students who were given the topic and additional ideas plus an outline of the textual macro-structure (topic, ideas and macrostructure given condition) produced texts with poorer lexical complexity than students who were only given a topic (topic given only condition).

These findings and suggestions are in line with the results that emanated from the interactions between the planning time conditions and the task conditions that I found in my data; for the essays a combination of the topic given condition with either the no planning or the extended planning condition yielded the best results.

4.4. Conclusion

This chapter discussed in detail the findings of this study. It focuses on the presentation, analyses and discussion of the results that emerged from my empirical investigation. Hence this chapter discussed the effects of planning time and task conditions on the quantity and the quality of ideas in the planning notes and the essays of my participants. Also, it discussed the interaction between the planning time conditions and task conditions in the planning notes and essays.

It was found that my findings lend very little support to the hypotheses as proposed in the literature, which claim that both an extended planning time and the provision of additional ideas will enhance the quantity and the quality of ideas in both planning notes and no planning time and also the provision of additional ideas will enhance as well the quantity and the quality of ideas in the essays. My attempt at a replication of Ong's (2013) did not yield the same results as her study especially on the effect of the planning time conditions. I will discuss this finding in the subsequent chapter which presents limitations and implications of my study and suggests avenues for further research on idea generation in the writing of L2 writers.

CHAPTER 5: CONCLUSION

5.1. Introduction

The current study aims to find better ways to assist learners who have to write in a second language (L2, English). To this aim I set out to investigate the role of a preparatory phase (idea generation) in L2 academic writing by examining effects of three planning time conditions and two task conditions on the quality and quantity of ideas produced by the ESL students. The quantity and the quality of the ideas that are produced both in the planning notes of the students and in the essay proper were assessed. The effects of planning time and task conditions in L2 writing had previously been examined by Ong (2013), Ellis and Yuan (2004), Ong (2010), and Ong and Zhang (2010, 2013). This study followed and replicated Ong's (2013) format and study, Ong (2013) examined the effects of three planning time conditions (planning time, extended planning time, and no planning time) and two task conditions (topic given, as well as topic and ideas given). The study sought to answer the following questions:

How is the idea generation process affected by various planning time and task conditions?

The three sub-questions underlying the current study are:

- a- Which of the three planning time conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?
- b- Which of the two task conditions produces a better quality and a larger quantity of ideas in the planning notes and in the essays?
- c- What effect does the interaction between planning time conditions and task conditions have on the quantity and quality of ideas produced in the planning notes and essays?

First I present and summarize the main issues of this study in the introduction of this chapter; subsequently I synthesize the empirical findings as answers to the above research questions and my four hypotheses:

Hypothesis (1): The ~~no~~ "extended planning time" condition (2) will produce both a larger quantity and a better quality of ideas in the planning notes than the "planning time" condition (1) and the ~~no~~ "no planning time" condition (3). More planning time is predicted to greatly reduce cognitive demands of the planning process that taps on the central executive function of the learners' working memory. This hypothesis is based on Galbraith et al., (2005) study.

Hypothesis (2): The ~~no~~ "no planning time" condition will produce both a larger quantity and a better quality of ideas in the essays than the ~~planning time~~ "planning time" and the ~~extended planning time~~ "extended planning time" conditions. This hypothesis is based on Galbraith's (1999, 2009) *Knowledge Constituting Model* which suggests that no planning leads to the discovery of more novel ideas when compared to planning.

Hypothesis (3): The ~~topic and ideas given~~ "topic and ideas given" condition will produce both a larger quantity and a better quality of ideas in the planning notes than the ~~topic given~~ "topic given" condition because the former condition places fewer cognitive demands on the learners than the latter condition (Kellogg, 1990).

Hypothesis (4): The ~~topic and ideas given~~ "topic and ideas given" condition will produce both a larger quantity and a better quality of ideas in the essays than the ~~topic given~~ "topic given" condition because the former condition places less cognitive demands on the learners than the latter condition. This hypothesis was derived from Glynn et al., (1982) and Kellogg (1988, 1990).

In addition, this chapter identifies the theoretical implications of the study with respect to the overall study area. At the end it highlights the study's limitations and provides direction as well as areas for future research.

5.2. Empirical findings

The main empirical findings were obtained through the data analysis and were presented throughout the data analysis chapter. This section will synthesise and conclude the findings of this study with respect to the overarching research questions.

How is the idea generation process affected by various planning time (planning time, extended planning time and no planning time conditions) and task conditions (topic given and topic and ideas given)?

Overall there were no immediate effects of the different planning time conditions on the idea generation process and this observation holds for both the planning notes and the essays, however, the extended planning time condition did affect the quality of ideas in the essays.

The various periods of planning time played a role in certain interactions between the planning time conditions and the task conditions: The largest *quantity* of ideas in the planning notes was generated by a combination of the topic given condition with the extended planning time condition; whereas for the essays a combination of the topic given with the no planning time condition yielded some detectable differences. For the quality of ideas in the planning notes and the essays the planning time conditions had only a small impact. However the two task conditions had opposite effects: For the planning notes a combination of the topics and ideas given condition with any of the planning conditions led to the generation of high quality ideas whereas for the essays a combination of the topic given condition with either the no planning or the extended planning condition yielded the best results.

An important result of my study was therefore that the idea generation process was mostly affected by the task conditions and that the influence of the task conditions varied between the planning notes and the essays which supports the assumption that the planning process may be fundamentally different from the writing process.

Against the four hypotheses presented above that both Ong's (2013 study and my study set out to test, my study produced the following results:

In terms of the influence of the planning time on the idea generation process, my findings falsify hypothesis (1) as neither in the planning notes nor essays was the quantity of ideas affected by the planning time conditions. Hypothesis (2) was partially verified as the quality of ideas in the essays – but not in the planning notes – improved as an effect of an extended planning time. These results differ from Ong (2013) whose data fully support both hypotheses (1) and (2). In terms of the usefulness of additional ideas which are presented alongside the topic for the idea generation process, my data falsify hypotheses (3) and (4) as the topic given condition

consistently produced both a better quality and a larger quantity of ideas in the planning notes and in the essays of my participants. This finding concurs with Ong's (2013) findings.

In conclusion, my attempt at a replication of Ong (2013) only partially yielded the same results as her investigation. My data indicate that the idea generation process in the planning notes was different to the idea generation process in the essays as there was a higher mean rate of ideas produced during the writing stage when compared to the planning stage and this has lend some support to Galbraith's (1999, 2009) proposition in knowledge constituting model and Ong's (2013) findings.

5.3. Theoretical implication

This study chose Galbraith's (1999, 2009) knowledge constituting model as its theoretical framework because Galbraith suggests a number of cognitive processes underlying the discovery of ideas. This model framed this study in its attempt to explain how ideas are developed in writing. The use of this framework was hoped to enable me to examine the impact of various planning times and task conditions on the writing task, and to emphasize the importance of the task environment for the generation of ideas.

The knowledge constituting model assists an investigator to capture the varied ways in which translation can be carried out by writers during the writing process; it clarifies the nature of discovery in writing; it provides a theoretical rational for different drafting strategies; and it helps to guide the design of empirical research (Galbraith, 2009a). The effects of planning time and task conditions in L2 writing were previously examined by Ong (2013), Ellis and Yuan (2004), Ong (2010), and Ong and Zhang (2010, 2013).

Galbraith scrutinized the effects the two planning conditions, namely planning and synthetic planning on the quantity of new ideas produced by either high or low self-monitors. According to Galbraith and Trent (2009) the planning condition requires writers to plan before writing, whereas the synthetic planning condition requires writers not to pre-plan but to write spontaneously. The main findings captured in Galbraith's (1999) model are that synthetic planning leads to a discovery of more novel ideas; that it produces more coherent ideas, increases the read ability of texts, and enhances the writer's topic knowledge as compared to planning.

This pattern is consistent with that presented by Kellogg's (1990) interaction hypothesis according to which free-writing or no planning writing improves writing quality, fluency, and lexical complexity compared to all other conditions. Ong (2013) also suggests that the free-writing or no planning condition produces extensively more ideas in essays compared to diverse planning time conditions.

Another study by Ojima (2006) examines the difference between writing tasks with planning and without planning on three ESL Japanese learners' written performance. The findings indicate that writing tasks with added planning time produced both a greater fluency and complexity, but did not improve linguistic accuracy (Ojima, 2006). Manchón and Roca de Larios (2007) found that L2 writers' language proficiency levels influence the amount of time they spend on planning in both L1 and L2 writing tasks; however, the language of composition (L1, Spanish or L2, English) does not affect the time spend on planning processes.

Some of these findings are supported by my own results because there was a detectable outburst of ideas in the no planning time condition. However, in line with the results that emanated from the interactions between the planning time conditions and the task conditions that I found in my data that for the essays a combination of the topic given condition with either the no planning or the extended planning condition yielded the best results. This means in the students' essays the quantity of ideas was significantly greater in the no planning time condition than in both the planning time and extended planning time conditions. However, the quality of these ideas was traded-off during this outburst of ideas as it was extended planning time condition during which the students produced less ideas but ideas of a better quality in their essays.

5.4. Limitations of the study

Research often does not go according to the original plans which indicate that all research carries certain limitations (Rule & John, 2011). The limitations of this research study stem from a number of reasons, like for example the sample size, time and language.

Firstly, the sample size of the study was small as it comprised of only thirty participants with three groups of ten participants which led to a 3x2 ANOVA design. Because this study replicated

Ong (2013) study, the sampling of this study should have resulted with the same number of participants as her study; unfortunately I was not able to recruit more than thirty participants for the current study whereas Ong had 52 participants. As 30 participants is still a sufficient number of participants to run the statistical tests that I employed, the smaller number of participants did not have a negative impact on this study.

Secondly, on several occasions the time designated to conduct this study had to be changed due to some students' unrest and strikes on the chosen campus. These events might also have contributed to the problems that I experienced in recruiting participants. The students were worried about the accumulation of assignments after losing time during the unrest. The unrest also meant that my own research was jeopardized as I had only ten months to finalise my research.

Thirdly, I had no control over the differences in the translating abilities of the learners which refers to their ability to transcribe ideas into linguistic representations hence the quality and quantity of ideas produced might have been influenced by the heterogeneity of my participants. My participants overall had a lower proficiency level than Ong's (2013) participants as is evident in the average marks they obtained from their lecturer for academic writing in English and I suspect that my participants are linguistically more diverse than Ong's (2013).

Moreover, the quantification of an idea unit in the planning notes inevitably was different from the essays because the planning notes were comprised mostly of chunks of lexical words, but the essays were largely written as complete sentences (Ong, 2013, p. 540).

Lastly, there is a dialectical relationship between cognitive and social/motivational processes that I was not able to consider within the confines of the current thesis: The processes employed by writers affect their motivation, and their motivations influence the processes they employ. Cognitive processes in L2 writing cannot be studied exhaustively in isolation from the social and motivational contexts in which they occur.

5.5. Recommendation for future research

I know that it would be good to try and lessen these limitations but that in the interest of space and time it was not possible to do so within the current thesis. It is certainly something to consider in further investigations. In particular I would have liked to increase my sample size and to look into the multilingual as well as the social and motivational contexts that my participants stem from.

Furthermore, a more recent study by Ong also deserves a replication. Ong (2014) examines the effects of two task environmental factors, planning time (pre-task, extended pre-task, free-writing, and control) and task conditions (topic; topic and ideas; and topic, ideas, and macro-structure) on the frequencies of five metacognitive processes of L2 writers during the planning and writing stages. Their metacognitive processes are: generating new ideas, elaborating new ideas, organizing new ideas, thinking of essay structure, and thinking of language aspects of the task.

5.6. Conclusion

This chapter summarised the essential issues which were addressed in this study; the empirical findings of this study show that the quantity and the quality of ideas in the planning notes and essays were mostly unaffected by the planning time conditions (planning time, extended planning time and no planning time conditions). The only exception was the quality of ideas generated in the essays which was significantly affected by an extended planning time. The quantity and the quality of ideas were predominantly affected by the task conditions.

Therefore, it was found that my findings lend very little support to the hypotheses proposed in the literature which claim that both an extended planning time and the provision of additional ideas will enhance the quantity and the quality of ideas in both planning notes and essays. My attempt at a replication of Ong's (2013) did not yield the same results as her study especially on the effect of the planning time conditions. Furthermore, this chapter highlighted the theoretical implications which follow from this study. Lastly limitations of the study and recommendation for future research were discussed.

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Appendices

Appendix 1

DECLARATION OF CONSENT

PROJECT TITLE: *Idea generation and planning time in second language academic writing:
An empirical investigation*

RESEARCHER

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I, Entisar Aljoundi, Student no. 211560253, I am a Masters student at the Linguistics Department, College of Humanities, at the University of Kwazulu-Natal. You are invited to participate in a research project entitled: *Idea generation and planning time in second language writing: An empirical investigation*. The aim of the study is to understand how three planning time conditions (10 minutes planning time, 20 minutes planning time, and no planning time) and two task conditions (essay writing plus added prompt/essay writing minus added prompt) may affect the quality and quantity of texts produced by learners whose second language is English.

Through your participation, I hope to understand how teaching students how to write in a second language may be improved. I guarantee that your responses will not be identified with you personally. Your participation is voluntary and there is no penalty if you do not participate in the study. Please sign on the dotted line to show that you have read and understood the contents of this letter. Your active participation in the study will take approximately 60 minutes. I will also visit your course and make observations about language proficiency so that I can understand the level of your English skills.

DECLARATION OF CONSENT

I..... (Full Name) hereby confirm that I have read and understand the contents of this letter and the nature of the research project has been clearly defined prior to participating in this research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Participants

Signature.....

Date.....

Appendix 2:

Standard deviation and proficiency level for the quality of ideas in the planning notes and the essays

1. Standard deviation and proficiency level for the quality of ideas in the planning notes

The standard deviations for my statistical analyses are comparatively high. For the results presented in figure (3, page: 74) the standard deviation is as presented in figure (1).

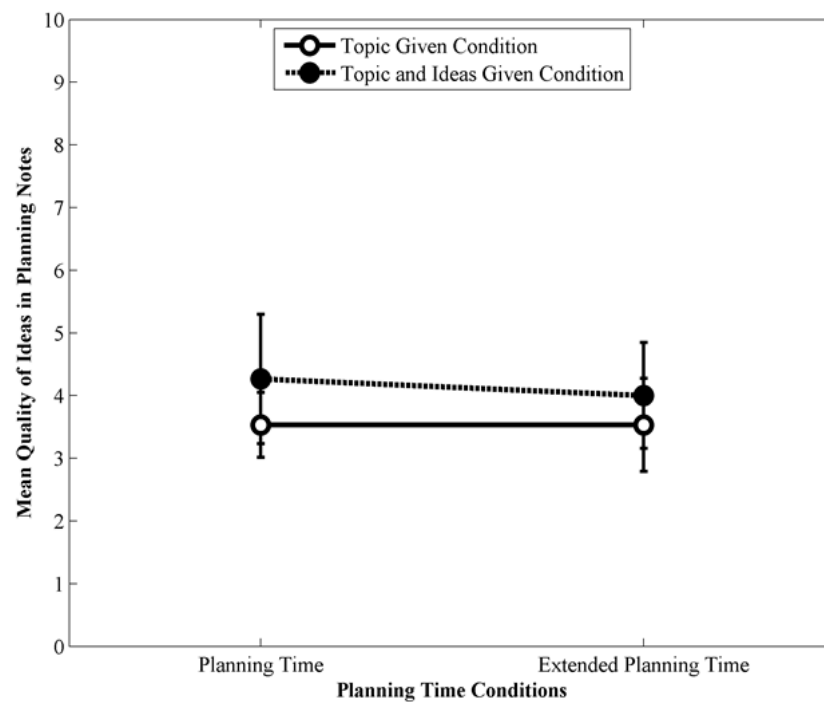


Figure 1: Standard deviation for the quality of ideas in the planning notes

The score plotted in figure (1) are: standard deviation of the topic given condition in the planning time condition was (0.52) and the topic and ideas given in the planning time condition was (1.03). The extended planning time condition, the topic given condition was (0.74) and the topic and ideas given condition was (0.85).

2. Standard deviation and proficiency level for the quantity of ideas in the essays

The standard deviations for my statistical analyses are comparatively high. For the results presented in figure (4, page: 80) the standard deviation is as presented in figure (2)

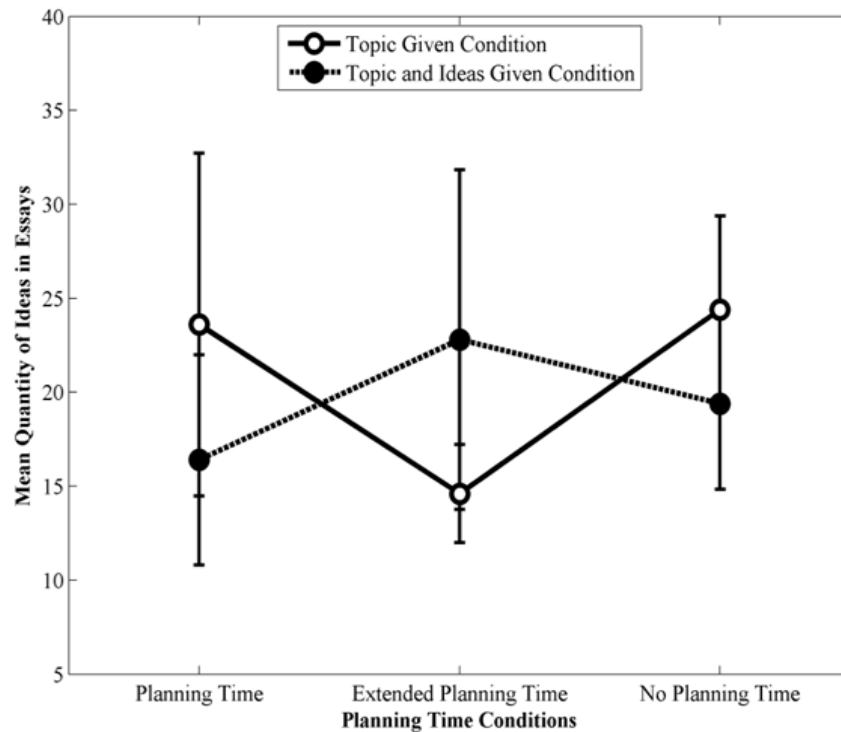


Figure 2: Standard deviation for the quantity of ideas in the essays

The score plotted in figure (2) are: standard deviation of the topic given condition in the planning time condition was (9.13) and the topic and ideas given in the planning time condition was (5.60). The extended planning time condition, the topic given condition was (2.61) and the topic and ideas given condition was (9.04). Also in the no planning condition, the topic given condition was (4.98) and the topic and ideas given condition was (4.57).

3. Standard deviation and proficiency level for the quality of ideas in the essays

The standard deviations for my statistical analyses are comparatively high. For the results presented in figure (6, page: 87) the standard deviation is as presented in figure (3).

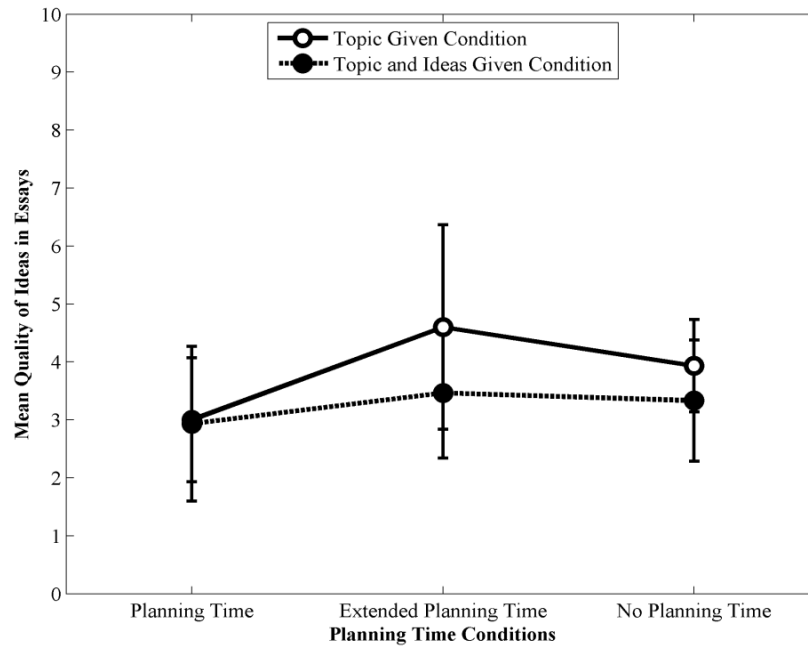


Figure 3: Standard deviation for the quality of ideas in the essays

The score plotted in figure (3) are: standard deviation of the topic given condition in the planning time condition was (1.08) and the topic and ideas given in the planning time condition was (1.33). The extended planning time condition, the topic given condition was (1.76) and the topic and ideas given condition was (1.13). The topic given condition in the no planning time condition was (0.80) and the topic given with ideas condition was (1.05).

Appendix 3: The Topic for the writing task

–The mass media (including TV, radio, newspapers and the internet) have a great influence on society. They play an important role in shaping the opinions and positions of people. Especially the younger generation is easily influenced and manipulated by the media”.

(The topic will remain the same across all groups; see table 1 for an overview of all experimental conditions).

Argue for or against this statement. Provide examples to strengthen your opinion.

Participants in the plus added prompt condition receive the following additional prompts

- The younger people often imitate the mass media; they may have an impact on their dress code, language, and behaviour.
- Young people are the least experienced and easily influenced and just copy bad behaviour.
- Young people are flexible and not set in their ways, hence they are willing to accept new ideas
- Many makers of commercials or other productions target young people.
- The mass media impact people differently depending on their social class and education – this has nothing to do with age.
- Young people are more influenced by their friends than by the media.
- Young people are very critical and find many things that are displayed in the media ‘uncool’.
- It looks as if young people are influenced by the media, in the meantime it is the other way around: The media are influenced by young people.

Appendix 4: Rating scheme for quality of ideas in planning notes (Ong, 2013).

Features/Scale	1 point	2 points	3 points
Relevance of main ideas and sub-points	No or few main ideas and sub-points are relevant	Some ideas and sub-points are relevant	Most or all main ideas and sub-points are relevant
Elaboration of main ideas	No elaboration of main ideas or poorly elaborated main ideas	Some elaboration of at least two main ideas. Each main idea consists of less than two sub-points, shown by means of examples, reasons or illustrations.	Detailed elaboration of at least three main ideas. Each main idea consists of at least two or more sub-points, shown by means of examples, reasons or illustrations.
Complexity of plans	Plan shows no or little higher-order thinking and is simple.	Plan shows some higher-order thinking and is semi-complex.	Plan shows higher-order thinking and is complex.

Appendix 5: Rating scheme for quality of ideas in essays

Score	Features
1-3 points	The essay is overall not convincing. The development of ideas is not good. A stand is provided, with two or three reasons given to support the stand, but the reasons are not well-explained or elaborated with examples, reasons or illustrations.
4-6 points	The essay is overall quite convincing. The development of ideas is quite good. A stand is provided, with at least three main reasons to support the stand. The reasons are well-supported and elaborated by examples, reasons, or illustrations.
7-9 points	The essay is overall very convincing. The development of ideas is very good. A stand is provided, with at least three main reasons to support the stand. The reasons are very well-supported and elaborated by examples, reasons, or illustrations. One or two counter-arguments are proposed with refutations.

5 February 2015

Mrs Entisar Khalifa Aljoundi 211560253
School of Arts
Howard College Campus

Dear Mrs Aljoundi

Protocol reference number: HSS/0045/015M

Project title: Idea generation and planning time in second language writing: An empirical investigation

Full Approval – Expedited Application

In response to your application received on 2 February 2015, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL**.


Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



.....
Dr Shenuka Singh (Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

Cc Supervisor: Professor Heike ME Tappe
Cc Academic Leader Research: Professor Bernard de Meyer
Cc School Administrator: Mr Sabelo Gumede

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